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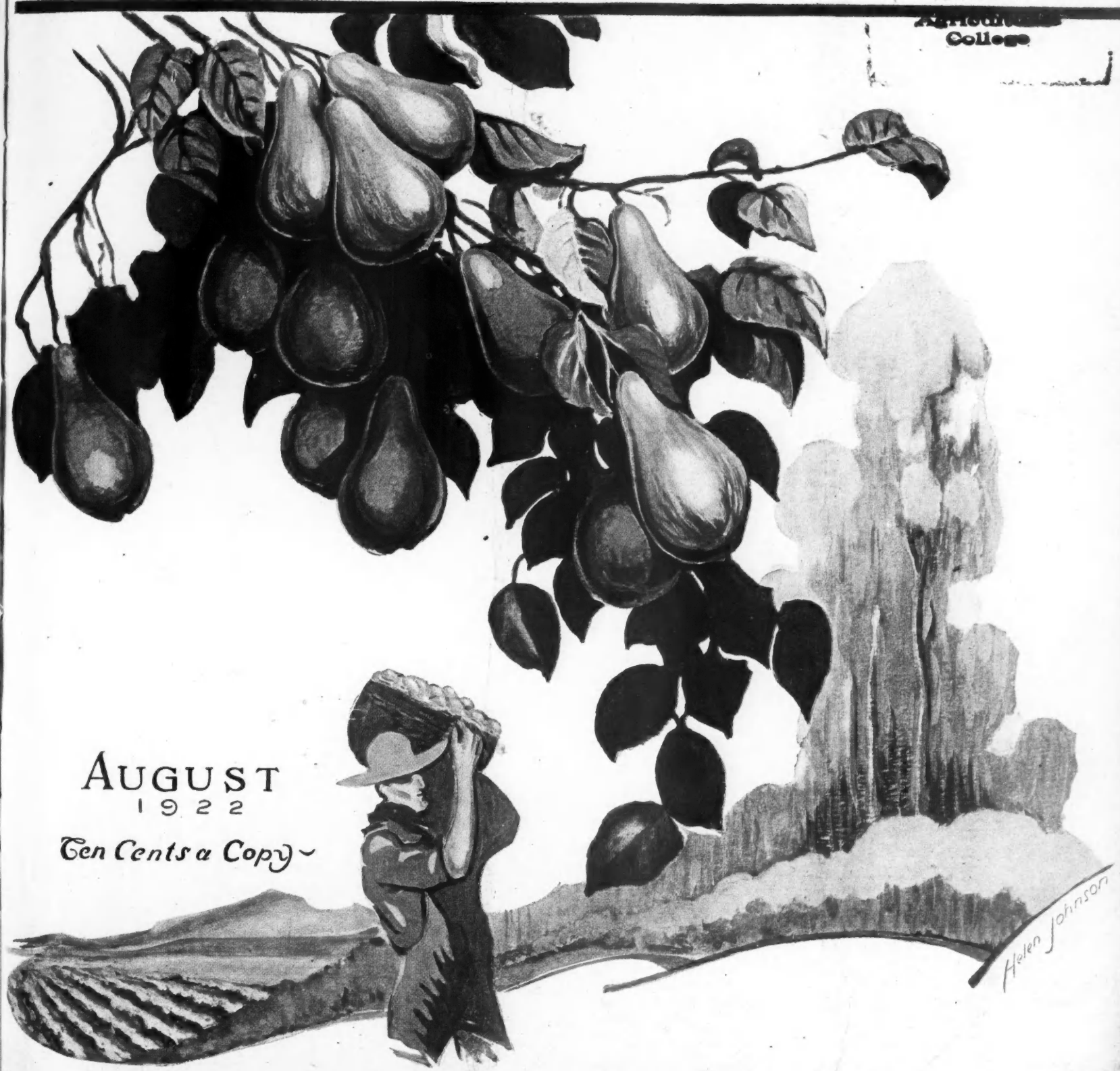

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Advertising Rates
$1.75 an Agate Line Flat, or $24.50 per Inch
Classified, 15c a Word

Entered as second-class matter Oct. 17, 1917, at Post Office at Chicago, Ill., under the Act of March 3, 1879

The National Fruit Magazine of America

AMERICAN
FRUIT GROWER
MAGAZINE

(Title Registered in United States Patent Office.)
Member of the Audit Bureau of Circulations

PUBLISHED MONTHLY BY
MAGAZINES, Inc., 53 West Jackson Blvd., Chicago, Ill.

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Vol. XLII AUGUST, 1922 No. 8

Pear Blight Control is Feasible

By H. S. Jackson

WITHOUT doubt the most important limiting factor in the successful growing of pears in the United States is the disease known as pear blight or fire blight. This disease is caused by bacteria and is one of the most destructive and difficult to control known to science.

Pear blight is too well known by commercial growers to need any detailed description as to the effect on the trees. What most pear growers or prospective growers wish to know at the present time is whether the disease can be controlled adequately and properly and whether it is safe to extend the planting of pears.

It is the primary purpose of this article, not to answer these questions directly, but rather to discuss the subject in such a way that the grower may answer these questions for himself.

Successful Districts

Perhaps the most successful pear growing section of the country is California and the Pacific Northwest. These are the only regions in the country where any material increase in acreage has been planted in recent years. Everyone is familiar with the fancy box pears sold on our eastern city markets. How is it that California can grow these pears with so little competition from the rest of the country? Many people seem to think that it is because pear blight does not develop so seriously under climatic conditions in California and Oregon and consequently western growers do not have as serious a blight problem to contend with. Anyone who has seen blight in both the east and the west can appreciate that this idea is far from the truth. It should be borne in mind that most of the western orchards are kept in a high state of cultivation which induces a very vigorous growth. It is well known that the blight works much faster in a vigorous tree than in one which is growing slowly. From my own observations I should judge that blight without attention would kill out an orchard quicker under western conditions than in the east.

Mr. Caldwell, a pear grower at Camino above Placerville, visited the east to make a study of the distribution of the California crop. Incidentally he visited Bartlett pear orchards in New York State, studying carefully the practices followed by the orchardists and the point that impressed him particularly was the lack of careful, systematic effort to fight the blight. He stated that there would be no Bartlett pears raised commercially in California if California growers employed as careless methods in blight control as was practiced in those orchards he visited. He further made the statement that he felt if the eastern growers were once awakened to the possibilities of raising pears, the east would become a serious competitor in pear production.

More Study Needed

It is evident that the reason why so few fancy pears are grown in the east and the middle-west is that there are so few growers who have made a sufficient study of pear blight to fight it adequately. I do not wish to imply that there are no successful growers of pears in the east and middle-west. There are certain outstanding growers in various communities who have applied the best known methods of blight control and who may be classed as successful growers.

Blight can be controlled even in years most favorable to its spread but it can not be eradicated. On account of limitations of space it is not possible to do the subject of blight control justice at this time as there are other phases of the subject which I wish to discuss. Briefly, the principles of control are based on the following facts. Blight is a highly infectious, bacterial disease. It spends its entire life in the bark of the pear tree and related fruits both cultivated and wild. The germs which cause the disease are spread by insects or by any method by which they may be actually carried from point to point or tree to tree. It is not wind borne to any extent, if at all. The blight is carried over from year to year in so-called "hold-over" cankers. The disease spreads very rapidly in vigorous growth, more rapidly downward than upward. It is often very difficult to detect just how far it has spread. It may live over in branches, crotches, trunks or roots. It may be carried for considerable distance by insects, particularly in blossoming time. Certain insects are known to spread it throughout the summer. Infection may occur at any point where the bark has been broken. It is not able to enter the uninjured surface of the bark.

Disease is Bacterial

In controlling blight in the orchard it must be remembered that the casual agent is a minute bacterium so small that it would take 25,000 of them placed end to end to measure one inch. Thousands can be carried on the point of a pin, millions on the surface of an unsterilized pruning knife. Since the organisms are in the bark and only escape naturally with the sticky ooze which exudes from active cankers, spraying is only of very supplementary value. So-called blight cures are worse than useless. The only practical method of control is the application of the most approved surgical methods carried out with scientific accuracy, keeping in mind the virulent nature of the disease and its method of spread.

Hold-over Important

To discuss the details of cutting out blight would require a special article. Attention should center around getting rid of all "hold-over" cases before the trees blossom in the spring, and in the summer to prevent by rigid and frequent inspections the loss of large limbs and the prevention of the formation of "hold-over" cankers. In summer cutting one should not wait until the leaves are black and dead but should catch these cases as soon as the bark begins to discolor. In cutting out twigs and branches each one must be studied individually, by examining with a knife the end of the portion cut off to determine whether the cut has been made well below any visible signs of the disease. By this I do not mean visible on the outside of the bark but under or in the bark. Blight frequently spreads for considerable distance down the branch in a hair-like line which can be detected only by the most careful examination. If such cases are not entirely removed the blight will continue to spread.

It is not always necessary to remove large branches even though large cankers may occur. This would depend on how nearly the branch was girdled by the blight. It is only necessary to cut out the diseased bark making a clean, smooth perpendicular edge.

Disinfection Necessary

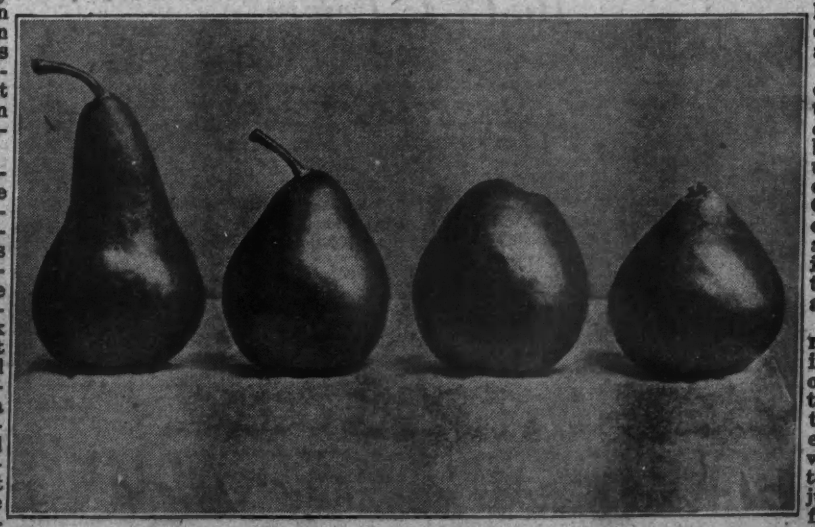
No one should think of cutting out blight without constant and thorough disinfection. Not only the tools used, but every wound made in cutting out the blight must be swabbed out thoroughly with an adequate disinfecting solution. It has commonly been recommended to use corrosive sublimate (bichloride of mercury) one part to one thousand in water. It has recently been determined, however, that this substance, while an excellent blight disinfectant for the tools, is not satisfactory for a wound disinfectant since the organic matter present in the cut surface of the wound reduces the solution and renders it at least partially impotent. Prof. F. C. Reimer, Superintendent of the southern Oregon Experiment Station at Talent, after much experimentation, found that cyanide of mercury, one part to five hundred parts of water, was an excellent wound disinfectant.

The solution now most commonly recommended is one part of corrosive sublimate, one part of cyanide of mercury to five hundred parts of water, or two large tablets of each substance in one pint or one quart of water. This solution must not be kept in metal containers. It is best carried in a bottle and applied with a sponge.

It takes much experience to adequately inspect and cut out blight in the proper way. Unless the cutting out is done right it had better not be attempted at all. Careless and unscientific cutting in an orchard will often result in more harm than good. On the other hand, the knowledge necessary is not difficult to acquire, and any conscientious person of ordinary intelligence can become expert in detecting and cutting out this disease in a relatively short time.

In many respects blight is a community problem. Often the source of infection may be in the neighboring orchard, or in uncared for door-yard trees in the vicinity. If such scattered, uncared for trees can not be eliminated, the commercial grower can well afford to contract with the owner to keep the blight cut out of them just as he does in his own orchard, for his own protection. In certain sections of the West a regular system of

(*Continued on page 27*)



Four Leading Varieties of Fall Pears
BOSC HOWELL ANJOU COMICE

The Manufacture of Fruit Products

By W. W. Chenoweth

THE operator of a Farm Factory producing fruit and vegetable products must always keep in mind a certain standard for those products he expects to sell to the consumers. There are three fundamentals that must be considered when we attempt to establish a standard. They are: Quality, Economy and Appearance.

Quality brings the customer back for more of the factory's output, and induces the consumer to speak in high praise of the products purchased, thereby giving the factory a lot of inexpensive, effective advertising. Quality should be of the highest type compatible with ecomomy of manufacture.

Economy in manufacturing determines the selling price, and this quite often determines the demand. The manufacturer must so handle his raw material and reduce the cost of handling down to the minumum, so that high quality products may be produced at as low cost as possible. It is in the handling of materials where the beginner usually makes his mistakes. One must obtain from a given lot of fruit all the value contained, insofar as is possible.

Appearance is that attribute of home manufactured products that possesses an unmeasurable psychological value. The appearance of a given product may tempt the customer to purchase a trial package, or the consumer to take the first serving, but it is the quality of it that brings the customer and his friends for more packages, or induces the customer to say, "a little more of the jam, please."

That home manufacturer who has solved the problems of putting up fruit and vegetable products of attractive appearance, of high quality, and at a minimum cost, is the one who will succeed in the business.

Experience Valuable

Experience is the greatest teacher in this work, but unfortunately too many are unable to profit by their experiences. The farm manufacturer must for the first year or two be an experimenter. He must first learn that, contrary to many of the books, there are many ways of making any fruit product and most of the vegetable products, that because the books say jam must be made so and so, is simply because the writer thereof knew no better, or believed the method given was the best general method to recommend.

The farm manufacturer must throw aside all superstition and believe that he can make jelly on a rainy day, that he may harvest his currants after a rain or during the rain if he cares to, and still make good jelly.

If one has a little knowledge of fundamentals and has faith in himself and his business, he need have little fear of not succeeding, if he will produce foods of quality at prices the consumer can afford to pay.

Making Jellies

The making of jellies is considered by many to be most trying, yet experience in jelly making will give one the same confidence of success as when working with other products.

Jellies are made from fruit juices and sugar. The juice containing the necessary jelly making materials except a part of the sugar is obtained from the fruit by cooking it out with water. The water is necessary to insure solution of jelly materials. It is impractical, if not impossible, to extract all jelly materials from fruit by making one cooking. If, then, we are to be economical, we will make a second, or even a third cooking if necessary. All of the juice will not flow freely from the cooked fruit at the close of the last cooking, consequently we should squeeze the pulps in order to extract the juice to the last obtainable spoonful. A grape juice or lard press is excellent for this. Soft fruits have more juice than hard fruits like apples, crab apples, plums and quinces, and naturally we should not use as much water when cooking these for jelly, as when cooking hard fruits.

Two Cookings Advisable

In general, two cookings are made using equal weights of fruits and water for hard fruits, and about one-fourth to one-third as much water as fruits for soft fruits or roughly one-half pint of water for each quart basket of currants, raspberries or other soft fruit. When the fruit has been cooked in a covered kettle until tender, the juice from the soft fruits is strained at once from the fruit through a single layer of cheesecloth, not applying any pressure and taking only what flows freely. The hard fruits are allowed to stand for five to eight minutes after cooking tender, and the juice is strained in the same manner as for soft fruits.

The pulps of fruits are returned to the kettle, and to the hard fruits add same amount of water as for first cooking. To the soft fruits add twice as much water as for first cooking, or one pint per quart of fruit. Cook in open kettle, allow to boil slowly for six to eight minutes, and allow to stand ten to fifteen minutes, strain off juice as from first cooking, and squeeze all juice from the pulps. Mix the juice from the first and second cookings and strain through four layers of good grade cheesecloth.

Handle Small Amount

The juice extracted above from fruit that is just ripe should contain some sugar and enough pectin and acids to make a good jelly, in addition it contains all the quality and flavor of the fruit. In order to make jelly of best appearance and highest quality, handle only a small amount of juice at a time in a kettle whose capacity is three to five times the amount of juice to be cooked. By small quantities, I mean two to five quarts.

The first step is to concentrate the juice. Take a measured amount of juice, set it over a good fire, and as rapidly as possible concentrate it as follows: Hard fruits about one-half, soft fruits about one-third. While still boiling, add the sugar, stir until dissolved, and boil as rapidly as possible until the boiling liquid sheets from the spoon. With proper methods of extracting the juice, proportioning the sugar, and rapidly boiling, soft tender jellies, firm solid jellies or tough rubbery jellies can be produced at will.

When jelly test is given, strain quickly thru a single layer of cheesecloth and pour into glasses. When the jelly has set, pour on a tablespoonful of hot paraffine, adjust cover, and store in a dry place.

Amount of Sugar

The amount of sugar to add will depend upon: The kind of fruit, i.e., acid or subacid, and the taste of the consumer. The proportion of sugar should always be based on the amount of juice before concentration. For acid fruits like currants, cranberries, and crab apples the sugar should be one-half to two-thirds as much as the juice, while for subacid fruits the sugar may vary from one-fourth to one-half as much as fruit juice. Jellies made with a small proportion of sugar have a delightful subacid taste and the characteristic flavor of the fruit. While if too much sugar is added the taste is sickish sweet, and the fruit flavor is masked by the excess sugar. A little experimenting on the part of the manufacturer will result in jellies of superior quality. Do not cook jellies by the clock. It can't be done successfully. Cook them until they are done. Find out by trial just how the sheeting from the spoon looks when the jelly has the desired consistency, or purchase a reliable thermometer, and by a series of trials determine the finishing point of the kinds of jellies you make, according to the methods you use. Because you will find out that if you make any great variation in your method, there will also be a variation in the finishing temperature.

Jam Making

Jams are the easiest of all fruit products to manufacture. If fruits are scarce or high in price, use the soft or less desirable market grades. Avoid decayed or stale fruits as these will ruin the quality, and besides is contrary to law and a good conscience.

In making jam from small fruits, do not add any water. Crush a few or all of the fruits and heat slowly until the juice flows freely, then rapidly until the excess water has evaporated. The cooked fruits should heap up on a spoon and be practically free from free liquor. While still boiling, add the sugar, stir thoroughly and boil rapidly until of desired consistency. This can be judged by the way in which the boiling jam heaps up on a spoon or sheets from it. When finished pour into containers and if hermetically sealed jars are used, adjust rubbers and covers, partially seal exhaust in hot water both for five to eight minutes. If placed in open top glasses, allow to cool, apply hot paraffine and cover as soon as paraffine cools.

Amount of Sugar

The amount of sugar to use depends upon: (1) the acidity of the fruit; (2) the taste of the consumer, and (3) the kind of container used, i. e., whether paraffine seal or hermetic seal. If hermetically sealed jars are used, the amount of sugar may be such as to develop that delightful subacid taste, with high fruit flavor and quality, and will vary according to acidity of fruit from one-third to two-thirds as much sugar by weight as fruit.

If paraffine sealed glasses are used, it is risky to use less than two-thirds as much sugar as fruit, since in this case one must rely upon the sugar content to prevent fermentation and spoilage.

Controlling Consistency

The consistency can be made whatever the manufacturer desires. It may vary from slop, to hard cheese or jelly. Probably the best consistency is soft butter-like with no appreciable amount of free liquor to separate from the solid portion.

(*Continued on page 25*)

The Future of Pear Growing

By C. I. Lewis

ASK an average pear grower in California about the future of the industry and he believes it is bright and that is true with most growers in the Pacific Northwest, and with some in the east. Pear growing, to be successful, depends upon good organization, to control blight, on the choice of the right stocks, an understanding of the pollenation problem and a wise selection of varieties.

Stocks to Use

A few years ago pears were grown entirely on the French roots or European seedling stock, and today this is the best stock for heavy soils or those of questionable drainage. It is, however, not at all resistant to the blight and is often attacked by the root louse. It is fairly hardy and produces a productive tree.

The Japanese or Chinese Pear, known as Pirus Serotina, has been used commercially more than any others of late. It is somewhat resistant to blight but should not be planted on heavy soils or those of questionable drainage. The Pirus Ussuriensis is particularly resistant to blight but is possibly a slow grower. Maybe some of the named varieties of this species which Professor F. C. Reimer has, would prove very desirable. The Japanese or Ussuriensis can be worked over to the Surprise, a middle western variety of pear which is decidedly blight resistant and which makes a very fine trunk and scaffold branches, and upon this can be worked the standard varieties. The Kieffer is still used by some and may have some value in double working.

Soil to Use

Years ago it used to be felt that any soil that would not produce other kinds of fruit, soil which might be a little heavy and which might be questionable in drainage, was adapted for pear growing, and while on the European root, pears often did thrive under those conditions, nevertheless, on the whole, they respond to well-trained soils and some varieties especially demand such a condition. Varieties like the Bosc and Howell seem to do much better in the better trained loam. In planting the pears they should also be planted about the same depth as they grew in the nursery row. Top planting of an oriental root in a heavy soil may bring grief.

Pollenation of Pears

Most varieties of pears are sterile and need to be interplanted with others. The Bartlett in some sections is fairly self fertile but even that variety is often improved by crossing with others. In the Antelope section of California the Bartlett will produce a large percentage of its crop seedless. Varieties like the Comice and the Anjou are very sterile and with such varieties at least a fourth of the planting should be good pollenizers. It is barely possible that the Anjou would be greatly improved by top working. Some top-worked on Kieffer in Hood River have come into bearing young and have borne heavily every year. The Anjou has a distressing habit of being white with bloom year after year, without setting well. Possibly a little pruning to reduce the top, double working and interplanting with varieties like the Clairgeau and Bartlett may help very materially. Pears have a way of developing many more spurs than can set fruit and as the trees reach maturity, any thinning out of the spurs will re-invigorate the remainder, will give rise to new wood to form new spurs and will produce larger, finer specimens of fruit. Old trees will often become great masses of spurs which become weak and devitalized and set poorly. Such trees can be revitalized in a season or two by merely thinning out the spur groups.

Varieties to Plant

On the Pacific coast a large percentage of the planting is the Bartlett, fol-

(*Continued on page 10*)

Harvesting and Shipping Bartlett Pears

By J. R. Magness

Formerly Plant Physiologist, Fruit Storage Investigations,
U. S. Dept. of Agriculture

THERE is considerable confusion on the part of the growers and shippers of Bartlett pears, as well as on the part of retailers in the various markets of the country concerning the effect of pre-cooling and other handling treatments upon the way the fruit holds up in the markets. Certain fruit has been found to remain sound and firm for several days after it reaches a full eating ripe condition. Other lots of fruit have been found to break down quickly when placed in the markets, and some have been found to decay and break down at the core while still appearing sound and firm on the outside.

Various theories have been presented to account for these wide differences in behavior of Bartlett pears, and particularly in Bartlett pears from the Pacific coast. Climatic or soil conditions in the growing sections, time of picking, and particularly the practice of pre-cooling pears before loading into cars, have all been advanced as reasons for certain fruit breaking down in the markets. It has been thought that the very rapid cooling of the fruit immediately after picking resulted in its going to pieces quickly when it was allowed to become warm.

The Bureau of Plant Industry has carried on investigations in this field for two years, and a careful study has been made of various factors entering into the proper keeping of Pacific coast pears. A more detailed report of these findings will soon be available in a U. S. Dept. of Agriculture Bulletin. (The Handling, Shipping and Storage of Bartlett Pears in the Pacific Coast States.)

Time to Pick

There is a marked difference of opinion concerning the effect of season of picking upon the way the fruit holds up, both during transit and after reaching market. This question has received particular attention, since it is one of the factors entirely within the control of the grower. The findings may be summarized as follows:

If the fruit is picked while very green, a greater number of days will elapse before the fruit becomes yellow and soft enough for eating. Thus there is an advantage in picking green fruit if it is desired to place the fruit on the market in the hard green condition that now commands a premium. Such fruit, however, holds up only a very short time after reaching eating condition, and has a particularly marked tendency to decay at the core while still sound on the surface. Fruit which is allowed to become somewhat riper on the tree, as, for example, the second picks, will become yellow much more quickly after being picked. After becoming soft and yellow, however, such fruit will hold for a much longer period than will fruit picked when very green. Also the later picked fruit is of far better quality, due to higher sugar content, less acidity and astringency, and better aroma.

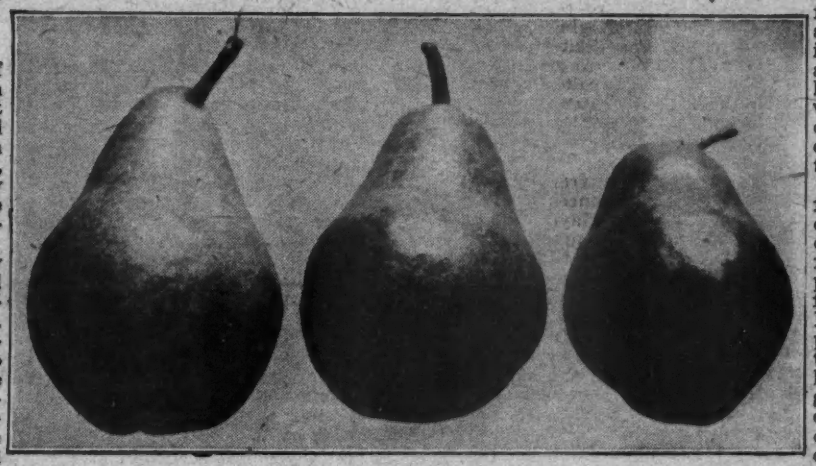
The Climatic Influence

Bartlett pears in the west coast states are grown under a very wide range of climatic conditions. Not only are they produced commercially from Southern California to the Canadian line, but there is also wide climatic variation within the different states. In California, for example, districts adjacent to the coast have a very cool growing season, with comparatively high humidities. In the interior valleys and hill districts however, such as the upper Sacramento valley, growing season temperatures are exceedingly high, and humidities low. Probably the hottest and driest of the commercial producing districts is the Antelope valley, on the Mojave desert of Southern California. There temperatures reaching 115 degrees are not uncommon during the growing season.

In Oregon and Washington, somewhat similar though less extreme conditions prevail. The Rogue river valley, in southern Oregon, is much the warmest district in the state, while the more northern sections are much cooler. In Washington, the Yakima valley is the warmest pear growing section, with Wenatchee slightly cooler. Both these districts have a distinctly cooler growing season than the interior valleys of California.

Hot Weather Good

A careful survey of the temperature conditions of various districts, as shown by U. S. Weather Bureau records, together with studies in the keeping and carrying qualities of Bartletts from the different districts, has developed the fact that there is a remarkable association between the climatic conditions under which the fruit is grown and the way that fruit holds up during transit and storage. Fruit from the districts having the driest and hottest growing season will carry through to market in better shape, and remain firm for a longer period after becoming ripe than will fruit produced under cool climatic conditions. Such fruit also ripens evenly throughout, and does not have the tendency to soften and decay first at the core, as is the case in fruit from the cooler districts.



Bartlett, The Most Popular Pear

California Bartletts enjoy a very enviable reputation in Eastern fruit markets, because of the excellent manner in which they carry through to market, and their very good holding qualities after arrival. This reputation is based, however, entirely on fruit shipments from the warmer districts. Fruit from counties adjacent to the coast in California does not have these good carrying qualities, and it has been found more profitable to market such fruit through cannaries than to attempt distant shipments.

Fruit from the Rogue river valley, in Oregon, has much better carrying qualities than that from any other portion of the state, and compares favorably with that from any except the very hottest of the California districts. The Yakima and Wenatchee districts of Washington are somewhat cooler, particularly around the first of September, when the heigth of the picking season is reached. Fruit from these districts can be shipped successfully to distant markets only by careful and prompt pre-cooling. This fruit compares with that of the Santa Clara valley of California in crarying quality. Although by means of pre-cooling this fruit can be placed in Eastern markets in firm and sound condition Bartletts from these cooler districts do not hold up so long on the market, and have a greater tendency to break down at the core than do those from warmer districts.

Effect of Pre-Cooling

There is a widespread belief among fruit growers that cooling the fruit very rapidly, as is done when the fruit is pre-cooled for shipment, has an injurious effect on the fruit upon its removal from the cold conditions, and that fruit that has been thoroughly chilled will go to pieces very quickly when it becomes warm. The tendency of fruit from certain districts to break down at the core has been attributed to pre-cooling.

It has not been possible in the careful experimental work that has been carried on to detect the least injurious effect from rapid cooling of the fruit, or from cooling to low temperatures, so long as the fruit is not frozen. Apparently the more quickly Bartlett pears can be cooled, after picking, the better they will carry through to market. The way they hold on the market is a result of growing conditions, time of picking, etc., rather than a result of whether or not they have been pre-cooled. Pre-cooling will not prevent the tendency

(*Continued on page 10*)

Fall Care of the Strawberry

By M. A. Coverdell

WHILE it would of course be presumptive to offer advice along this line to the commercial growers of strawberries since they all realize the immense value of proper care in the strawberry-bed after fruiting, I have noticed so many small growers allowing this important work to remain neglected, that I venture to call attention to a few suggestions that may be made along this line.

Rowing the Vines

The practice of many growers, in allowing the bed to mat over, following fruiting, forms too many plants. This works two detriments: The parent vines send out so many runners that the old plants are stunted, this weakness being transmitted to the young plants, on which next year's fruiting will be set. These runners, taking root and forming the new plants, cover the ground so thickly, that proper development of the vines is impossible.

When the runners begin to reach out from the parent plant which is even before the fruiting season is over, we go through the strawberry-bed and remove many of the runners, especially where there are more than two or three from one plant. The runners are trained to cover the ground evenly, so there will not be some barren spots, while others are too thick.

As soon as the fruit is harvested, about one-half of the old vines are cut out, spaded, if the plot is a small one; disced or plowed out, if the size of the plot will admit of a horse or team being used in it. Rows are from a foot to eighteen inches wide, in small beds; from two feet to three feet wide if the plot is large enough. Then, next spring, the row of old vines can be dug or plowed up, leaving the young, vigorous plants for the season's fruiting. Where there are spaces of considerable area containing no plants, we dig out a cavity the size of a half-gallon cup, cut out a vigorous plant with a chunk of dirt that size hanging to its roots, and set it out in the cavity, pouring some water around it and raking some fine dirt around the plant after the water has been soaked in well. We never try any other method of fall planting.

Get Rid of All Weeds

Right at this time is the period for putting a quietus on all weeds in the bed. While we are going through the patch, training the runners, we are also "fishing" out every little weed and spear of grass. It is amazing how soon these weeds spring up and sap the soil of the moisture so essential to the development of the young plants.

Even after the new vines begin to take firm root, these weed-pests continue to spring up, till late fall, and retard the growth of the plants. Caution: Weeding, or any other kind of work, for that matter, in the strawberry-bed should be done only when the soil is not wet enough to pack. If one can secure dependable boys and girls, it is best to have the weeding done by these light-weight helpers. Above all, don't allow any weeds to go to seed in the strawberry bed.

Many Virtues of Mulching

I am surprised at the large number of growers who never mulch their beds through the winter months. No other single phase of strawberry-growing appeals so much to the writer as that of thorough mulching of the plants. The mulch must, of course, not be spread over the plants too early in the fall, else they will be scalded out and killed. The mulch should be applied just after the ground freezes and winter appears to be right at hand. If possible, the material secured for mulching should be from some source where one feels there will not be much danger of any appreciable amount of weed-seeds.

We do not like the mulch as deep as advocated by some. A couple of inches, after settling, has proven sufficient, with us. In any case, it is a good plan to go over the bed in early spring and loosen the mulch, so the vines can push thrrough. At this particular period, the bad effect of over-mulching is most apparent, the thick covering tending to retard the plants, in some cases actually smothering them out entirely.

Some advocate using corn-stalks for mulching, but our experience has been, that their protection is hardly as complete as that of good straw or leaves, although the leaves are apt to pack a little too closely to the plants. Leaves are excellent, however, and if used correctly, are productive of fine results.

Observations in Merry England

By Samuel Adams

IT HAS been delightful to have the opportunity to study here in England, at first hand, the horticultural development of the country on the one hand, and the marketing methods and facilities on the other.

English horticulture is radically different than that found in most parts of America. So-called large commercial plantings are not common but there are a great many small plantings where fruit is grown in connection with truck gardening and where many small fruits are produced, interplanted between fruit trees. The trees are generally headed exceedingly high and interplanted among the trees will be found raspberries, gooseberries, strawberries and garden truck. Much intensive culture is given the trees and the ground is maintained in a high state of fertility. Against the walls on wire trellises, one often finds dwarf or semi-dwarfed trees trained in various fantastic shapes. In connection with the fruit development, one often finds greenhouses—in fact, some of the finest fruits are grown in the hot houses, such as peaches, apricots and very often grapes. Tomatoes and cucumbers are often grown quite extensively. The fruit is marketed in an entirely different manner than is commonly practiced in this country—some buyer in the city often coming out and buying a large proportion of the crop. The fruit is often delivered in sort of heavy wicker or willow baskets and these baskets may be used from year to year.

Berries Unusual

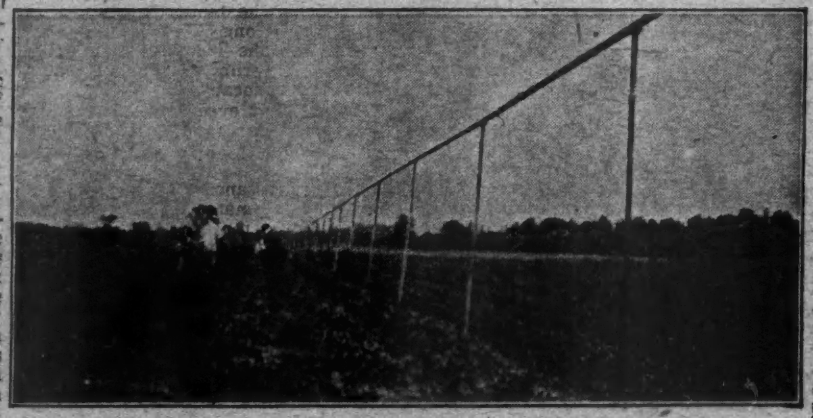
We have seen some very unusual berries over here. The gooseberries especially, are vastly different from those produced in America. The gooseberries are rather large, often of high color and of fine flavor, and are highly thought of. They are a great contrast to the small, green sour fruit which we produce. The strawberries are also delightful. They are of high aroma and flavor. These berries are marketed quite differently than is the custom in the United States. Quite large baskets are used, the shape of the Climax Grape basket used in America. Some of these are square at the end rather than being rounded. The common name given to these baskets is "chips." Strawberry baskets are often a little greater than 9 inches in length at the bottom and about 10½ inches long at the top and are nearly 4 inches deep and about 5½ inches wide at the bottom by 6 inches wide at the top. These baskets will hold about three pounds of fruit. In paying freight to the railroads, these baskets are generally classed at the rate of thirty-four baskets per cwt. The fruit seems to arrive in good condition in such containers and it makes a very attractive home package.

Markets Crowded

The English markets in the big cities like London are very fascinating to visit, and conditions are quite similar to those found in America, in that the general markets are very crowded and the cities have long ago outgrown their marketing facilities. Cold storage has seemingly not been developed to the extent it is in America. The markets are interesting, however, in that the fruit comes from all quarters of the globe. During June, fruit from South Africa, Australia and New Zealand was in great evidence. One sees many varieties with which we are familiar in this country, such as the Jonathan apple. The apples are packed in boxes of somewhat different shape than those used in America and do not have quite as high a finish or as attractive an appearance as the pack which comes from the Pacific coast. English marketing conditions seem to be surrounded by much more secrecy than is true in America. One sees fewer marketing journals and there is very little marketing information given out. One can attend the auctions and know what the fruit is bringing in that way, but little is seemingly known about the fruit through what is known as private treaty or private sales.

Big Advertising Campaign

While the English may seem rather conservative in their marketing, still they are taking hold of advertising with great energy. The Sun-Maid Raisin Growers of California are carrying on an extensive billboard advertising campaign in this country. It is reported that over $100,000.00 is being spent, and the fresh fruit produce handlers (those which handle both fruits and vegetables) are planning to conduct a very extensive campaign all over England. It is claimed this is being done in the interests of bigger business for all who are connected in any way with the handling of fruit and vegetables. Advertising is to be carried in the leading British magazines, in the prominent dailies and in the big Sunday editions. Special color transparencies are being handled in the railway and tram cars and in the bus systems—also special films are being prepared for the movie houses. Wherever there is danger at any time of a glut in the market, a special effort is to be made to move the produces. This campaign is very commendable. It can probably be copied in America to a very wide extent. This campaign could mean much to American fruit growers as it ought to lead to a much higher consumption of fruit than would otherwise take place.



Skinner Irrigation System for Strawberries

The Crop Outlook

Naturally, some growers in America are interested in knowing what the crop outlook is in England and the continent this coming year, as a rather limited business only can be done in apples, for example, until the fruit grown naturally in England is cleaned up. It must be borne in mind however, that there are two distinct classes of fruit offered in the market over here. There is the dessert, or high class eating fruits, and there is the so-called "stew fruits" or in other words, fruit which is used for cooking purposes. The English seem to be fond of jams, sauces and cooked fruits, and varieties are especially grown for that purpose. Take the Keiffer pears for example. There is a big demand for these pears in England, where they are classed as "stew pears" and they are highly sought for the making of preserves, for baking, pear sauces, etc. The present outlook for the crop in England is very poor. The season opened fairly well with a good bloom but insect pests have been unusually bad this season and there has been a heavy drop of fruit. The apple crop never did look any too promising even at the blossoming time, and there has been rather a poor setting of both apples and plums. It is undoubtedly a reaction of the very severe drought which occurred all over England a year ago. Aphis seemed to be very bad on many of the trees.

The season so far this year has likewise been rather dry and this has quite seriously injured the crops of berries. Reports which I can gather from the continent indicate a rather light crop of fruit.

The prune crop of France and the Balkans was reported very light and there are some reports coming from Belgium and Holland and Northern France that the crop will not be as heavy as anticipated, so all in all the English market should be very attractive to the American fruit grower this coming season, and there should be large importations of fruits of all kinds. The fruit from America and Canada seems to be held in high esteem in this country owing to the high finish and the superior methods of packing.

Rambles of a Horticulturist

By C. I. LEWIS

WE HAD the opportunity recently to enjoy a three-day visit in Berrien County, Michigan, where we had the chance to study the horticulture of that district. Berrien County has taken one wise move, viz.: they have diversified their fruit industry. It is very common in passing a small fruit farm to find raspberries, strawberries, grapes, a few sour cherries, maybe a small block of apples or some peaches all on the same farm. In this way they are avoiding putting all of their eggs in one basket.

We went over to Berrien county to especially investigate the cane fruit industry which is highly developed in that section. We were very fortunate in being able to join a party of scientists under the leadership of Prof. Roy Marshall of the Michigan Agricultural College. Among those present were Dr. C. L. Shear, Dr. R. B. Wilcox, George M. Darrow of the Department of Agriculture, C. G. Woodbury of the National Canners Association, Dr. A. E. Colby of the University of Illinois, Dr. G. H. Coons and Prof. C. M. Bennett of the Department of Botany, Michigan Agricultural College, Prof. Roy E. Marshall, Prof. R. E. Lee and Dr. N. L. Partridge of the Department of Horticulture, Michigan Agricultural College, Prof. T. A. Farrand of the Michigan Horticultural Society, Howard Taft, State Department of Agriculture, Lansing, County Agents F. L. Simonton of St. Joseph and W. C. Eckard of Paw Paw, Stanley Johnston of the South Haven Experiment Station and Robert Anderson, Covert, Mich.

It was refreshing to see all these men putting their shoulders together to try and solve the problems the growers are facing. As is customary in all cane fruit districts, diseases creep in such as Mosaic, Wilt, Anthracnose, Blue Stem and others too numerous to mention. As a result of the work of these scientists, the general recommendations are that plants be selected for the setting of new plantations largely from growers whose patches are now free of diseases of all kinds and that a sane cooperation be brought about between the growers and the nurserymen whereby a sort of selected or certified plant could be secured. It was believed that growers and nurserymen would join eagerly in such a campaign. Careful inspection is being carried out by the State authorities, meetings are being held in the field by the County Agents to educate the growers on the diseases and every step is being taken to not only save the very fine cane fruit industry of Berrien County but to develop it on a greater scale.

The cane fruits offer an attractive field in fruit production.

Varieties Grown

The two varieties of red raspberries grown are the Cuthbert and the King, and it is interesting to see that the King is by far the hardier, and in some patches where the Cuthbert would show considerable winter injury, there was little or none in the King. The King, however, while being a good table berry and suitable for shipping, is not prized as high among the cannerymen as is the Cuthbert which is the standard all over the United States for canning and jam manufacturing.

Of the black caps, the two varieties grown are the Cumberland and the Plum Farmer, with the latter increasing in popularity due to the fact that it is earlier and extends the picking season. The Plum Farmer seems especially well adapted for the soils of Berrien County. While in the past a great many Wilson blackberries have been planted, the variety that is now increasing in popularity, according to the Nurserymen, is the Eldorado, and it looks as though this variety would become the leader in a relatively short time.

Strawberry Culture

Berrien County produces a heavy tonnage of strawberries but the season this past year, owing to the heat and drought, was only about ten days long. It was interesting to see what irrigation will do for strawberries under Midwest conditions. William E. Daley has twenty acres set to the Gibson strawberry. He has put in an overhead Skinner system of irrigation and has plenty of water and power to handle forty acres. This system was put in while such costs were relatively high and average about $600.00 an acre but it includes the pump and mains enough to furnish double the acreage now planted. Mr. Daley finds it best to mulch the plants where this system of irrigation is handled. It keeps the soil from packing and keeps the berries clean. There is every indication that his

(Continued on page 24)

New Places and People

By Mary Lee Adams

THE New York dock and the great vessel slipping slowly out into the harbor. You can still see them, those dear ones who have come to bid you bon voyage, and amid the wildly waving hundreds you can distinguish Jennie's handkerchief and Bobby's hat. How happy you feel, and how unexpectedly the sudden lump comes into your throat as the familiar figures dwindle and are lost in the big crowd. Best turn away your eyes from the shore now and, if you like, make a tour of inspection of the wonderful floating palace which is to be your home for a week to come.

Save that the bed room is a trifle small, you might be in any first class hotel of one of our large cities. But just wait until morning and you'll get your first whiff of English atmosphere. If you, like myself, are a plain ordinary American on your first trip abroad, you'll feel a distinct thrill when there comes a discreet tap at the cabin door and a high English voice proclaims "Your barth is ready Madam."

Oh those wonderful trained English servants who seem to feel it an honor to wait upon Madam, who are so deferential, yet so firm where sacred tradition is at stake and threatened by the reckless American. Take, for instance, our innocent habit of drinking water at breakfast. If you look good for a very substantial tip at the end of the voyage, you may be able to induce—I had almost said to seduce—some weak-kneed and venial waiter to permit you to indulge in your peculiarity.

But if you fall low enough to prefer a large cup of coffee and cream with your lunch rather than a small cup of black coffee after the meal, none can be found so disloyal as to yield to your entreaty. If you are a good soldier you shrug your shoulders and cheerfully take it when you can get it. "C'est la guerre."

In the Sight of Land

I believe your second thrill comes when you realize that you are not going to be seasick after all on this great big ship. Then you can begin to enjoy yourself and your fellow passengers quite thoroughly. There'll be celebrities among them. We had Madam Mitzi, Dolores and other foot lights and head liners, not to speak of Josef Hoffman and Field Marshall French. But however fine the voyage, every eye is strained for the first sight of land, and a stir of pleasurable excitement is observable among the entire crowd.

We who were bound for England, had at Cherbourg the alarming experience of seeing how baggage is handled across the water. Have you ever thought your trunks were roughly treated by Uncle Sam's baggage smashers? You should witness the shocking brutality accorded by the French sailors who come out in tenders to get off the luggage of those landing at Cherbourg.

The helpless trunks are started down a long chute, one after the other as fast as they can run, and if one unlucky piece happens to jam and impede the desired rate of progress, a vicious twist and kick may send it over the edge of the incline crashing down to the depths below.

Do inanimate objects think? I'm not sure, but I know they feel. Yes they do. They feel nervous. After witnessing the harsh treatment of their hesitating forerunners, the huge pile of trunks aboard quivered with terror and, like locoed horses, lost all control. Infected with sudden panic, they literally stampeded over the side, whirled apparently through space, and BANG! were lost to sight in the depths below. Paris must have a grand opportunity to sell new trunks after the arrival of a big liner.

Up to London

We landed at Southampton in a clear, tender dawn and, after spending two hours over passports, claiming trunks, inspection, etc., were whirled away in a long train of miniature cars to London. Only six people can sit, three facing three, in these comical little English cars. But the trains certainly can go, and the time seems all too short as we pass rapidly through the lovely English landscape, so soft and peaceful with the tiny picture villages and the bright cottage gardens.

I can't see why these small compartments are considered more exclusive than our large cars. We can ride for days in a Pullman without addressing any one if such be our fancy, but in these little face to face carriages it is churlish not to speak and, in our experience, everyone does so. To be sure we may not have traveled with the exclusive-minded since we always went third class, there being no second class. It is comfortable and less than half the price of the first class coaches which are used by comparatively few.

The first English field we passed held a homey interest for us. There in its midst, looking as if it had been born there, stood an American tractor. And at every station signs invited us to "Eat-mor Raisins" of the Sun Maid Brand. The country side was suffering from a drought during our stay, but still the meadows looked charming and very gay with red poppies and white ox-eyed daisies which were scarcely welcome to the farmer.

We never think of England being hot and dry, yet so it was in mid June. But 24 hours after the papers had cried out against the exhausting heat of 87°, there was frost. So don't let our English friends tell you they have the advantage of an equable climate free from all the trying extremes of our own.

The Biggest City

With us, to see London was to love her. Any good guide book will serve to refresh one's memory as to historic events and inform one of the correct mode of procedure from sight-seeing to tipping. But only personal experience can give the joy of actually finding oneself in Picadilly Circus, Leicestre Square, Charing Cross, The Strand, Whitechapel and all the many localities which are household words with us at home and consequently invested with romance.

The mere knowledge of being in the biggest city in the world is impressive. The magnificent buildings on all sides carry out this impression. It would be a poor clod indeed, who could enter Westminster Abbey or St. Paul's Cathedral without mingled wonder, awe and admiration. The great Houses of Parliament are the chief ornament of the beautiful stretch of architecture along the Victoria Embankment of the Thames. The noble bridges and grim Tower add their dignity to this locality.

We could not even learn the names of hundreds of stately buildings, palaces and homes during our stay, but we learned much that was very agreeable. For instance, we found that not one of the many handsome policemen was ever too busy or too ignorant to direct us with courtesy and interest to our desired destination. We learned that taxicab drivers of London are reasonable in their charges and expect but a small tip, even though they are entirely dependent upon these for their livelihood since they receive no wage for conducting their speedy vehicles with supernatural adroitness through the crowded traffic of the often narrow streets.

The taxi drivers yield the palm of unrivaled skill only to the bus drivers who direct their great tall double-deckers with speed and safety past every vehicle known to traffic, past men with push carts, women on bicycles, boys with newspapers and grooms leading prancing horses. I pay this compliment unhesitatingly in full knowledge of the cleverness of our own drivers on such crowded thoroughfares as those of Chicago and New York.

To our minds the London cabby and bus drivers are supreme. Their sureness is such that one soon gets over expecting the collisions that to our eyes seem inevitable on account of the English rule "drive to the left." This left-handed system is invariable with vehicles, but as for foot passengers, extended observation convinced us that the custom with them is—go to the left in the morning, go to the right in the afternoon, and go as you please at night.

The busses go everywhere. By all means see London from the top of a bus. They charge just about enough to pay for the trouble of stopping to pick you up and, once mounted, you overlook all there is to be seen. Some obliging fellow passenger will always supply you very courteously with needed information when your curiosity or ignorance demand enlightment. Our habit was to mount the bus that pursued our chosen route and when the conductor came to collect fares and inquire our destination we would answer "To the end of the line." If you can't get on top of a bus take a street car. The upstairs seats give a fine view and the routes are many and various.

A Sad Custom

Wherever you may choose to go you will see a sight strange and unpleasant to American eyes. You'll see public bars with men and women drinking together while tiny children and even baby carriages wait outside. They don't always drink to excess but it gives a shock the first time you see it, and the last time also. We were shocked right along every time we passed a bar with women drinking. We simply couldn't get accustomed to it, and I believe no American could, would or should.

On the Long Walk

Since the famous Ascot races were held while we were in London, it was a peculiarly fortunate time to visit Windsor Castle and the environs. The picture post cards can show much better than words can tell, what it looks like. But I can tell you this much—

(*Continued on page 16*)

Advertising California Pears Pays

By Hubert duBois

THE California Pear Growers Association has launched an advertising campaign in the four cities of Boston, New York, Philadelphia and Chicago. In all, about $50,000.00 will be spent in trying to increase the consumption of the California fresh Bartlett pear. Twenty thousand dollars of this money will be spent in the territory surrounding Chicago. Forty specialty salesmen are to work with the distributors and retailers to try and move one million dollars worth of pears in this one center.

Paid Last Year

The campaign this year is quite largely inspired from the remarkable results obtained by the association in the cities of Boston and Philadelphia last year where similar advertising campaigns were conducted. As a result of these campaigns, Philadelphia's total absorption of the California crop increased from 4.6 per cent to 9 per cent and Boston's increased from 3.9 per cent to 10.3 per cent. While these markets were increasing, Chicago dropped from 9.6 per cent to 7.9 per cent and New York from 35 per cent to 34 per cent, and the rest of the United States from 47 per cent to 39 per cent, showing conclusively that the advertising campaigns in Philadelphia and Boston were probably responsible for the great increase in consumption in those markets.

A very intensive advertising campaign is to be conducted by two of the Chicago dailies and very attractive window trims will be placed in every retail store and fruit stand. Appealing letters have already been written to every retailer in the city, these being followed by the visits of the salesmen, and later a second letter will follow up the visits, in order to drive home the campaign. A pear week has been set aside to be known as the period between August 7th and 12th, and during that period a window trim prize will be offered of $250.00 to the retailer making the most attractive display. The campaign in Chicago is in charge of Mr. Ben D. Dixon, Director of Advertising of the California Pear Growers Association.

Object of Campaign

The object of the campaign is to dispose of some million dollars worth of pears in Chicago territory this coming season and in order to accomplish this, to show the buyers that it is to their advantage to offer the pears at such a price to the consumer that he can move a larger tonnage at a smaller margin, than to try and offer a limited tonnage at a very wide margin and run the danger of loss from deterioration.

In doing this work, the pear association is on the right track. We want people to buy fruit in larger quantities and to buy more of it and if we can induce the retailers to see this point of view, the aim can be accomplished. The campaign is, to a certain extent, altruistic. The association does not control the pears it advertises; the buyer may select any brands he sees fit of California pears. They all benefit from the advertising.

Pear Growers Association

The California Pears Growers Association is a non-profit co-operative organization having eleven hundred members, all being California Bartlett pear growers. These growers are signed up for a period of seven years, beginning with the year 1921. There are at present about fourteen thousand acres of Bartlett pears—half being in bearing—and the acreage is increasing about twenty per cent annually. It is the aim to dispose of about twenty per cent of these this year (or a million dollars worth) to the canneries. Out of an average crop of 100,000 tons, which is expected this year, the association plans to ship 55,000 tons east and to sell 30,000 tons to the canneries, while 15,000 tons will be dried.

This association has stabilized Bartlett pear growing in California. It has obtained a wide distribution among the cannerymen. By dividing the tonnage sensibly, it sees that no one market is over-crowded and yet no one suffers for want of sufficient tonnage. Pear growing under such a co-operative movement is bound to be a success. This organization is ably managed by Frank T. Swett, General Manager, of San Francisco.

Grade and Pack

A NEW shipping season is at hand. The new crop of fruit is now arriving in the great consuming centers. It must be borne in mind by every fruit grower, that the first real foundation stone of good marketing is efficient grading and packing. It should be always borne in mind too, that poor fruit injures the sale of all; that poor basket fruit will injure good barrel fruit; that poor barrel fruit will injure good box fruit and poor box fruit will injure good barrel fruit; and poor apples hurt orange sales and poor oranges hurt good apple sales. In other words, the presence at any time of a large quantity of poorly graded and packed fruit is a menace to the marketing of all fruit. Let us strive therefore to make this season a banner year in grade and pack.

Crop and Price

THERE is very little correlation between the size of a crop and the amount of money which a producer finally gets, or the price which the consumer pays. A study of the apple crop of the United States over a period of twenty years will bear this statement out. The price is not alone controlled by the size of the crop. Such factors as distribution of the crop and standardization affect it to a certain extent but the money buying power of the public, the general business conditions have much to do with what the grower will receive. There is a tendency on the part of some to feel, because we have a larger apple crop than a year ago that prices should be much lower. On the contrary, last year, with the relatively small apple crop, prices instead of being exceedingly high, were relatively low. This year, however, we find vastly different business conditions. The buying power of the public is much greater than it was a year ago. This has been borne out by the fact that many states produced two and three times the strawberry crop they did a year ago, yet the public took these berries at a profit to the grower.

One district alone which was using five hundred cars of potatoes a day one year ago, has been using eleven hundred cars this year. The early fruits on the whole have been selling well and the public have been buying in larger quantities than formerly. Business in general is showing improvement.

In the automobile industry, in some of the big centers they are having difficulty in securing sufficient help. Manufacturing plants are beginning to advertise on the outside of their plants for help. The agricultural situation in the country is much better and this always reflects on business in general. The construction industry is having one of the biggest booms known. The financial situation is improving and money is available at lower rates. There is increased activity in many of the manufacturing industries such as cotton, for example. Exports have increased in cotton cloths and in iron and steel. The steel industry, which is a pretty good pulse of the condition of the country, shows an increased production, while in mining, copper production has taken a jump. There is no reason why the apple crop of 1922 should not bring very fair returns, if those who have to do with the selling of these apples will but use intelligent distribution and follow sane, sound business methods in disposing of their crop. It must be borne in mind that 60 per cent of the apples should be out of the producers hands by January 1st, that the best policy is to start the price where the fruit will move and to raise the price gradually each month during the year to meet the costs of handling and to protect the early buyers.

Summer Meetings

IT IS the custom of horticultural societies in the middle west and east to hold summer meetings. This may consist of a two or three-day meeting in the orchards in one district, or may consist of a journey through leading horticultural districts. In some states two meetings are held—one being a meeting in some central horticultural district where all can gather and spend a day or two in discussing problems of great interest—the other being a trip through some sections that are highly developed along horicultural lines.

These meetings are very meritorious and should have the support of orchardists in every state. Drop your work for a few days or a week and see what someone else is doing along the same line. You will come back to your own orchard with many new ideas, with inspiration which will make you produce better fruit. You will often return to your place with renewed satisfaction in what you have already yourself accomplished. You will have an increased pride in the standing of your business. You will form friendships which will be life-long. By all means attend the summer meetings of your state horticultural society.

Pulling Together

THE greatest need in American agriculture is a pulling together of all factors interested in its development. There should be the heartiest co-operation between such factors as the producer, the distributor, the transportation lines and the consumer. It is practically impossible to solve big problems of marketing without such hearty co-operation. There should be a sincere pulling together on the part of all agricultural organizations. There is no room for bickering and jealousies and pulling apart. Agriculture needs co-operation; it needs the hearty support and the pulling together of all factors interested in its development. Only by such a program can agriculture be developed to the extent which it should be in this country.

The Federated Growers

FRUIT growers all over the United States have been greatly interested in the press reports concerning the Federated Growers, as it is now generally known that this is the organization which the Committee of Twenty-one appointed by President Howard of the American Farm Bureau Federation, has perfected as a machine for the marketing of the fruit of co-operative bodies throughout the United States. The sub-committee appointed to formulate the final plans of the Federated Growers undoubtedly took a wise step when, instead of trying to organize an entirely new marketing machine, instead of trying in one year to build up an elaborate, separate marketing organization, they saw fit to take over the North American Fruit Exchange to serve as a vehicle for the marketing of the crops controlled by the Federated Growers. We have enough marketing organizations in this country today—perhaps too many—and it was a wise move not to add another.

Arthur Rule, General Manager of the North American Fruit Growers, is too well known to the fruit fraternity to need any introduction. He has been associated with the fruit industry all his life. He has been recognized as a leader in successful marketing. He is to throw his energy and bring over the strong machine which he has organized, to be at the service of the Federated Growers. It will mean that the Federated Growers can start out immediately in the handling of a huge tonnage of fruit whereby, had they attempted to organize a separate selling force, it might have taken years to have perfected the same. The growers are going to expect a great deal from the Federated Fruit Growers. Many look upon it as the dawning of a new era in the marketing of fruit in this country.

Pear Growing

PEAR growing in many parts of the United States has been sadly on the decline. The main reason has been the Fire Blight. In this issue we have several articles on pears which should be read by all fruit growers. There is a very inviting and big field for pear production. What some districts need more than anything else is to organize pear production so that Blight can be reasonably controlled. Some of the best work which the Extension Departments in our agricultural colleges could do would be to demonstrate that pear growing can be made a great success in certain communities.

The pear is a fruit of great merit. It is highly prized by European countries and it could be consumed in much larger quantities in this country. There are millions of our people who rarely eat a pear. It is unfortunate that as grand a fruit as is the pear, it should be so poorly known. A surprisingly small percentage of our population could name more than one variety of pears. Fruit growers are overlooking a good bet when they pass up pear growing as something unprofitable and impossible. It can be made a successful industry in many sections and one which will pay a high profit to the producer.

REO SPEED WAGON

A Truck That Will Do Your Work—Carry Your Loads

If there is any kind of work to which the flimsy light, or the excessively heavy trucks, are not fitted, it is the work of the farm.

Loads vary from a small lot of groceries to an overload of grain or produce or live stock.

Stamina and stability are the prime requisites.

No light vehicle made for smooth even city streets can negotiate your roads and carry your loads.

This Reo Speed Wagon was designed expressly to meet your needs.

And we Reo Folk knew just what those needs were—for a very large percentage of Reo automobiles and trucks have always gone to the country.

We had the most important feature already in service and fully proven—that wonderful four cylinder Reo motor.

That's the greatest motor ever built.

Rugged—built for hard work—all working parts 50 per cent over-size

Here is a motor whose records no other has ever approached.

More than 500,000 miles is the record so far of one of the first Reo Speed Wagons.

Now nearly eight years in service—and doing the same work daily it has always done.

That is the kind of truck you need on the farm—chassis, transmission, clutch, axles and other units, on a par with that matchless motor.

For all loads ranging from a quarter-ton to a ton-and-a-quarter.

Hauling over all manner of roads—city pavements, macadam, dirt roads—and trails.

At times you must over-load cruelly—alright:

In all such conditions the Speed Wagon will do your work quicker and cheaper.

PRICES

Other body types are obtainable mounted upon the standard Speed Wagon chassis at the following prices:

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It is one of the important reasons why more people ride on Goodyear Tires than on any other kind.

GOODYEAR

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The Future of Pear Growing

(Continued from page 4)

lowed by a generous planting of such varieties as Howell, Clairgeau, Bosc, Anjou, Comice, Nelis, and with a smaller planting of such varieties as the Hardy, Forelle and Patrick Barry. The increasing favor of the Bosc has been one of the outstanding factors in pear production in this country. A variety barely known ten to fifteen years ago is now rapidly becoming the most popular pear produced and one of the most profitable.

In New York, according to Prof. U. P. Hedrick, the standardized varieties are Bartlett, Seckel, Kieffer, Bosc, Anjou and Clairgeau, of importance in the order of their names, while the Michigan Horticultural Society is recommending such varieties as the Bartlett, Kieffer and Seckel for general planting, and the Clapp, Howell and Bosc, together with others named, for the southern part of the state. In Massachusetts they are showing an increased interest in the Bosc and they find it is greatly improved by grafting it on to Anjou stock as the Bosc is rather a poor grower. In the south the so-called hybrids and sand pears like the Leconte, Kieffer and Garber have been grown quite extensively, but Director H. P. Stuckey of the Georgia Experiment Station has recently described a new hybrid of great promise—a pear which will seemingly grow very well throughout Georgia, Alabama and South Carolina. It is an unusually strong grower and quite highly resistant to blight. While not of dessert quality, it is excellent for canning and preserving. It is a heavy producer and should be a money maker. The fruit is very attractive, being a creamy yellow with conspicuous, small, brown specks. The pear has a pleasing odor, resembling somewhat the pineapple, and has been named the Pineapple Pear. It is an early bloomer, being about three weeks ahead of most commercial varieties. It can be easily rooted from cuttings taken in November and December and put in a nursery row in the same way figs and grapes are handled. The Georgia Experiment Station is making a special study of this pear and will appreciate communications from people who have tried it.

Harvesting Pears

(Continued from page 4)

of Bartlett pears grown under certain climatic conditions to break down at the core, but neither will it aggravate that tendency. Rapid cooling of Bartlett pears before placing them in transit appears to be the only feasible way now known to successfully transport this fruit from certain of the western districts to distant markets. The way the fruit holds on the market appears to depend largely upon the climatic conditions under which the fruit was grown.

Highway Markets for Fruits

FRUIT growers about Rochester, N. Y., have for many years been in the habit of making attractive displays of their products from the roadway opposite their houses. The sale of peaches, pears, plums and cherries, also of raspberries, strawberries, blackberries, currants, gooseberries, has increased each year. In some instances the children of the family attend to the sales of this wayside fruit.

There are business announcements along the highway which are not beautiful or desirable, but the display of fine fruits along the highway adds to the beauty of the roadways and in a measure educates the public in regard to the value of fruits.

Most consumers would prefer buying direct of the producer, feeling that the fruit was more clean and wholesome, as they are not when left standing in the city streets where dust and germs accumulate.—Chas. A. Green.

Crop Report

ACCORDING to the U. S. Department of Agriculture, the crops of fruit in this country this year, compared on a ten-year average, are as follows:

Peaches	128
Pineapples	118
Pears	116
Grapes	113
Almonds	113
Apples	106
Grape Fruit	101
Black Berries	105
Walnuts	100
Prunes	97
Apricots	95
Oranges	82
Lemons	68

The commercial apple crop was estimated in July as being 31,413,000 barrels, while the total crop will amount to 189,549,000 barrels. At the earlier estimates it was thought that New York state would lead the union in apple production but that position is now accorded to the state of Washington, with 7,470,000 barrels—New York state being second with 5,551,000 barrels. Other states producing over a million barrels, in relative order of production, are California, Oregon, Illinois, Pennsylvania and Missouri.

The Pacific Northwest crop now looks to be somewhat larger than the prediction a month ago and may reach up to about 40,000 cars in comparison with 44,000 cars a year ago. The commercial apple crop in this country for the past seven years is as follows:

Commercial Crop		*Farm Crop*	
Year	Barrels	Year	Bushels
1922	31,413,000	1922	189,549,000
1921	20,098,000	1921	96,881,000
1920	33,905,000	1920	223,677,000
1919	26,174,000	1919	147,457,000
1918	24,743,000	1918	169,911,000
1917	20,959,000	1917	174,608,000
1916	25,069,000	1916	204,582,000

Hardening Trees

WHILE tillage is very valuable for young trees and there seemingly is nothing which will take its place, it must be remembered that it is always possible to have too much of almost any good thing. After the young trees have made sufficient growth it is well to cease tillage and allow the trees to harden well before the coming winter. The growth of weeds during late August, September and October among young trees is not to be deplored as it generally assists in hardening the trees and putting them in better condition. Rank weeds occurring in early summer and in the spring, however, are not desirable as they generally sap the moisture which the young trees need.

Dr. J. C. Whitten

FRIENDS of Dr. J. C. Whitten were shocked to learn of his untimely death in Washington, early in June. For twenty-three years Dr. Whitten was head of the Horticultural work at the University of Missouri, and for the past four years was in charge of the work at the University of California. He was just becoming nicely established in his new field.

Dr. Whitten had a charming personality, was loved by all, was a delightful entertainer on the lecture platform; he was considered one of the big, successful men in American horticulture and will be sadly missed by his former students, faculty associates and fruit growers in general.

Apple Anthracnose

ON THE Pacific coast trees are subject to apple tree anthracnose, sometimes known as "black canker." This works very severely on the two-year-old wood of trees and often will attack older branches. Where it is working badly at this time, a spray early in August of Bordeaux mixture at the rate of 4-4-50 is found to check it. As soon as the apples are harvested the trees should be sprayed with either Bordeaux mixture or Lime Sulphur, winter strength.

Co-operation Pays

UP IN Sturgeon Bay, Wisconsin, co-operation is doing a great work for the cherry growers. There are between three and four hundred growers in that district and all but two belong to the Door County Horticultural Union. Last year this association paid its members 10½c per pound for their red cherries. This is probably the finest price received by any red cherry growers in the United States, and this year, even with the big crop all over the country, the growers expect to net at least 8c. About 20 per cent of the fresh fruit is sent to the market and 80 per cent to the cannery. A few years ago some of the buyers used to try and squeeze the growers but now the grower is independent in that he may can every cherry which is grown, to advantage, but they feel that they should distribute over parts of Wisconsin and Minnesota at least, about twenty per cent of the tonnage. For these fresh, graded cherries they allow the grower 35c more a case than the cannery would pay, this to pay for the extra work and pains in putting up the pack. This year the opening price was $2.60 F. O. B. for a sixteen-quart case. This association borrows some three hundred thousand dollars early in the season at 7 per cent and advances to the growers soon after delivery, 75c to $1.00. This money is borrowed largely on warehouse receipts obtained on the canned goods. As soon as the money comes in, their advances are made and the final payment is made in January, with the clean-up of the canned goods. Growers are charged 6c extra when they receive crates but they would lose this 6c if they did not deliver to the association.

There are four or five other co-operative bodies carrying on special work but they have largely the same membership and practically the same *interlocking* directors. There is the cannery which is the safety valve of the association. This cannery runs twenty-eight cherry pitters. The cannery association is planning to spend some $20,000.00 this winter in Chicago, in advertising their Sturgeon Bay canned cherries. Then, they control the box factory. They found it necessary to buy this plant in order that they could be guaranteed sufficient boxes and practically all the boxes or cases made in the district are manufactured in the co-operative plant.

The fourth co-operative body, which is very interesting, is the harvesting association. Instead of each grower having to worry himself sick over getting pickers from day to day, the pickers are brought in by the harvesting association. At the time I arrived in Sturgeon Bay the pickers were just arriving—some four thousand of them. They are divided into camps. These camps are generally under the auspices of the Y. M. C. A. or the Y. W. C. A. Clean bunk rooms are furnished with double deck bunks, a dining room and a well equipped kitchen, and most of the camps have good facilities for washing and bathing—many of them maintaining shower baths. The labor is well organized, consisting mostly of boys and girls brought from various towns in Wisconsin. About 50c a day board is charged. The pickers are organized into groups or squads. Very careful supervision is given by the authorities to see that the work is well organized and properly conducted. The growers seem enthusiastic over the operation; in fact, I have never visited a fruit section which was better organized from the harvesting point of view, than the Sturgeon Bay district. Possibly, some day the four or five different co-operative efforts which are being carried on by the fruit growers of Door County will be all merged into one big organization with its several departments. It would seem that possibly such a movement would have many advantages. It would tend to centralize authority and would reduce overhead.

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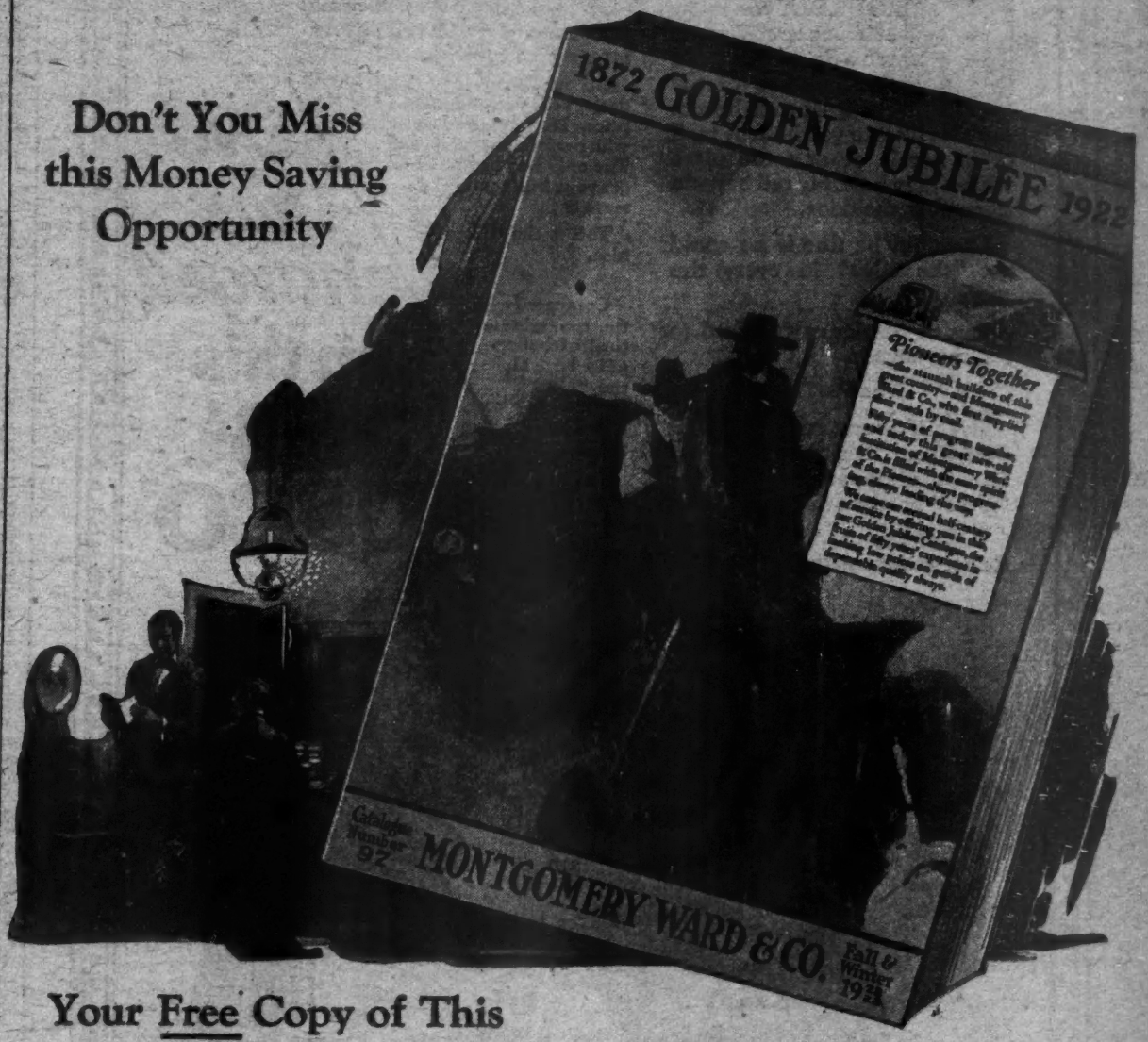

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PROBABLY you know at least one car-owner who is always on the look-out for the cheapest tires he can find. He likes to get them by mail or at a sale or at some place where they have big red bargain signs over the door.

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No tax charged on this 30×3½ "USCO"

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Plums and Cherries

I want to put in a small orchard of plum and cherries and want your advice on kinds of each. Does the American plum do well in this section? Is it a late or early variety? I would like some of the early and some of the late kind. The Early Richmond cherry does well here. Is there a better kind for this section? Would like to know the best time to set, spring or fall?—W. M. L., Missouri.

THE America is a mid-season plum and is the best all purpose plum I know—resists rot, hardy, and bears when most of kinds fail. For early varieties, the Shiro and Mammoth Gold are very good. Later varieties like Omaha, Waneta (originated by Prof. Hansen) are both splendid.

In cherries, the early Richmond is a standard variety and is widely planted. The Dyehouse, ripening slightly earlier, is darker, has a smaller seed and is better quality. The Montmorencies ripen about ten days later and are the best and most dependable of all the cherries. The English Morello type are late and very acid.

In your state, I would advise fall planting—particularly cherry and apple trees. Planted in the fall they live better, start quicker and often gain nearly a year's growth.

Thinning Peaches Pays

A CLASS in fruit growing at the North Carolina Agricultural College has been trying some experiments in the thinning of peaches. They found this spring that after removing fourteen hundred peaches from a tree, they still had seven hundred left—and investigation further showed that this was probably one hundred more than it was well for the tree to carry, for a crop of six hundred fruits represents five crates of six four-quart baskets containing twenty fruits each. A number of years ago the class removed twenty-nine hundred specimens of fruit from a single tree, still leaving nine hundred and fifty, but in this case the tree had to be re-thinned in order to reduce the number to the proper amount.

Almost invariably there is good money in growing large, highly colored peaches. Rarely, if ever, is there any money in producing small, inferior fruit.

Cracking of Prunes

CRACKING of prunes is apparently due to application of water after the growth of the trees has been checked by a period of light irrigation or drouth. Objections have been raised to summer application of irrigation water at blooming time and at the time of maturing of fruit. Observations of soil moisture at blooming time have, however, shown that a full supply of moisture exists in the soil naturally at that time and no detrimental effect upon the fruit has been found. With ripening fruit there has been no appreciable difference of quality between irrigated and non-irrigated peaches and prunes; nor has any effect upon the amount of cracking of fruit been observed as due to irrigation at this time.

Spanish Grapes

IT IS well known that Spain is a large producer of fine table grapes. The amount of fruit exported in 1921 and the markets to which it was sent are as follows:

Grapes Exported During 1921

Destination	Barrels	Half Barrels
Amsterdam	5,738	.....
Baltimore	498	.....
Belfast	6,750	.....
Boston	36,258	1,345
Bristol	30,915	212
Cardiff	28,876	72
Copenhagen	20,063	951
Christiania	14,821	.....
Philadelphia	508	.....
Glasgow	99,840	700
Swedish Ports	12,091	525
Habana	1,750	329
Hamburg	8,817	.....
Hull	61,607	455
Liverpool	258,171	933
London	177,292	50
New York	210,275	3,119
New Castle	29,862	80
Rio de Janeiro	5,879	.....
Rouen and Dunkirk	150	.....
Santos	4,126	100
Southampton	21,772	50
Trieste	1,012	100
Vera Cruz	200	.....
Sundry	870	.....
Total Exports	1,073,687	10,825

Peach Tree Cankers

THE excessive rains this season have been especially conducive to the development of brown rot, starting first with the blossoms, and continuing on the fruit in both the green and mature stages.

In numerous cases it has been observed that the brown rot fungus has passed from a decayed fruit into the twig or branch where a canker has been produced. In some cases these cankers have girdled the twigs, with the result that the leaves have been blighted, much like a pear or apple tree attacked by fire blight bacteria.

Through the blighting of the new growth there is a loss of fruit buds for the next season, but the chief cause for concern is the fact that in these brown rot cankers on the twigs, the fungus lives over winter on the trees. The following spring when the tree starts growth the fungus in the cankers also begins to grow and produces conidia or summer spores which attack and blight the peach blossoms, especially on early varieties of peaches.

This loss from the brown rot fungus in over wintered twig cankers may be reduced if the blighted branches are removed from the trees as soon as observed.

It would be difficult to detect all of the brown rot cankers as some may not girdle the twigs, but in working about the orchards at picking time blighted twigs will be observed here and there. Often a partly decayed fruit will be found near the base of such a blighted twig. The blighted twig should be cut or broken from the tree several inches below where the decayed fruit is or has been attacked. It would be preferable to remove such diseased twigs and fruit from the orchard at once, while it can be easily detected.—J. A. McClintock, Ga. Exp. Sta.

Much News in Little Space

The California Fruit Growers Exchange has just issued an attractive brochure in memoriam of G. Harold Powell.

According to the U. S. Department of Agriculture, the commercial production of strawberries this year was 18,500 cars compared with 10,681 cars in 1921, 8,490 in 1920 and 16,236 in 1916. There were increases practically everywhere. Missouri, Florida, West Tennessee and Illinois show an increase of 300 per cent. North Carolina shipped 1,100 cars compared with 480 a year ago. The states of Arkansas and Tennessee each produced better than 2,000 cars; Missouri had 1,856 cars; Maryland had 1,634 cars and Louisiana 1,600 cars.

Recent reports show that the prune crop of Agen, France, is now reported at only one-quarter of normal. The Italian filbert crop is also reported light but of high quality. The harvest began about the middle of July. Italy imported into the United States last year over 7,000,000 pounds of filberts. Oregon and Washington have a great opportunity in the next few years in being able to furnish all the domestic supply of filberts needed in this country. The Oregon and Washington filbert is superior, in size, yield and quality.

At the second annual meeting of the Western New York Fruit Growers Cooperative Packing Association, it was shown they now have twenty-eight locals affiliated in the organization, distributed in ten counties of Western New York, having a total membership of over six hundred.

The U. S. Department of Agriculture has issued a bulletin entitled "Handling, Shipping and Cold Storage of Bartlett Pears in the Pacific Coast States." It is known as Bulletin No. 1072.

The Northern Pacific Railroad has recently ordered one thousand new refrigerator cars. This will be welcome news to the fruit shppers.

Peach growers in the Fort Valley, Ga., district, find that their trees were somewhat injured this past fall by too early spraying with dormant sprays. Owing to conditions found in that region it is believed unsafe to put on the dormant sprays until after the foliage has dropped and a few frosts or cold nights have hardened the tissues. After that there seemingly is little danger. Many of the trees were summer pruned this past year and owing to a mild fall, went into the winter in an active condition Growers all over the south are advised to watch this condition very carefully another fall.

Oranges were recently shipped to Queen Wilhelmina of Holland from Dutch Guiana. This fruit being shipped without cold storage, arriving in Holland in splendid condition. We are beginning to find that with proper care, we can ship fruit much farther than we formerly believed.

The Western Fruit Jobbers are moving their offices to Chicago. This is one of the largest organizations of fruit shippers in the United States.

The California Fruit Growers Exchange is planning to invest $200,000.00 in the manufacture of juice extracting machinery. They are placing this on the market, putting special salesmen on to handle the sales. The use of machines will furnish an outlet for a huge tonnage of small oranges and furnish a healthful drink to people in our cities.

Roy E. Marshall of the Michigan Agricultural College believes that by proper pruning and fertilization, much can be done to prevent off years of apples. The fruit is borne on spurs of a certain length. The very short or the very long spurs are not as productive as those about one-half inch in length.

The U. S. Department of Agriculture, Washington, D. C., has issued Farmers' Bulletin No. 979, entitled, "Preparation of Strawberries for Market"; also Farmers' Bulletin No. 901, which is a very interesting treatise on the production of strawberries. Berry growers can secure these publications by writing to the department.

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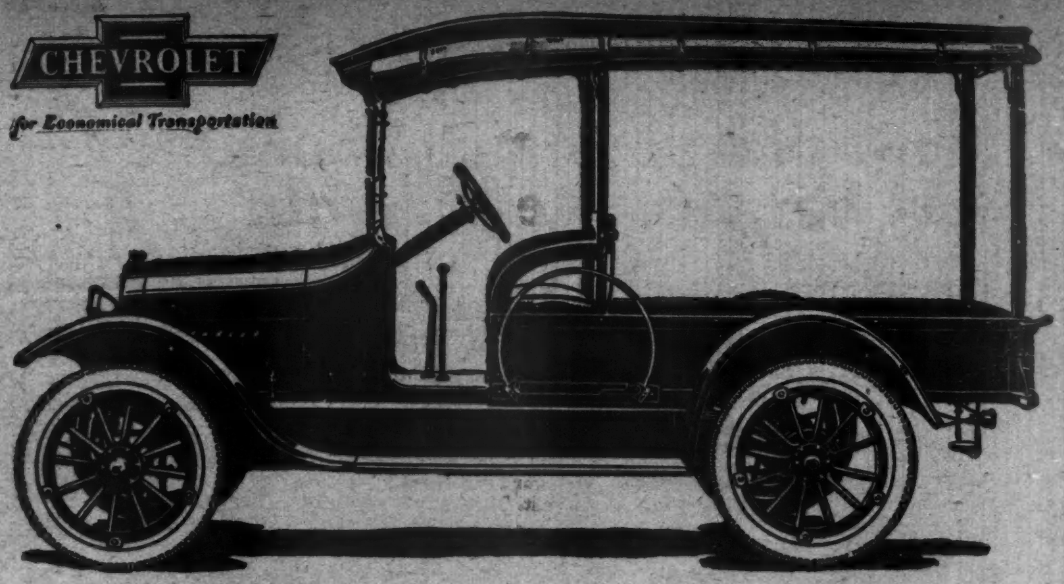

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Full Weather Protection—Waterproof curtains let down on sides and rear, fully protecting driver and load against rain or snow. Flexible windows in curtains.

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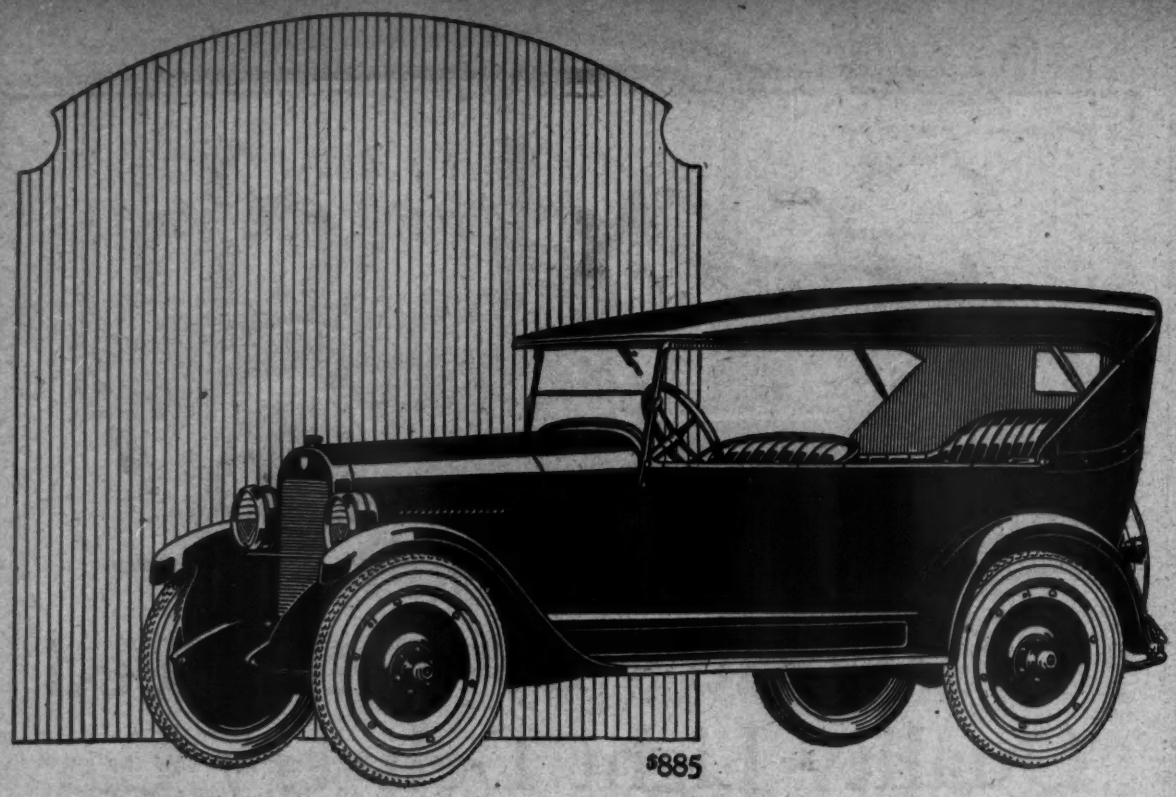

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Better Package Needed for Exporting American Fruits

THERE is real cause for complaint over the frailty of packages used in shipping American fruits to other countries, say marketing experts of the Bureau of Markets and Crop Estimates, United States Department of Agriculture. True, it is not always known at packing time whether the fruit is to be exported or not, and it would not be practicable always to employ special export packing methods even if such methods were adopted. But at the same time, improved packing methods might well be used in the purely domestic trade, for the necessity exists there as well, even if in lesser degree.

Compared with the results secured by other countries in export trade, American shippers have much to learn in packing fruits for foreign shipment. Australian apples require about two months in transit to England, but the fruit generally arrives in good shape with little or no breakage or decay. The same is true of South African oranges. Even such tender fruits as apricots and peaches are brought to England from South Africa, not only sound, but free even from the little dents and marks which the American shipper has come to accept as inevitable. Belgian hothouse grapes arrive in England with every berry perfect and the bloom almost untouched.

Barrels are not entirely satisfactory as containers for apples in export shipment, say the bureau's specialists, and it might be worth while to experiment rather extensively with third and half-barrels or with some form of box or crate as a possible and acceptable substitute for the barrel in eastern districts. In any event, there is little excuse for using barrels on which some of the hoops are not fastened, or in which nails protrude to puncture and ruin the fruit.

The bureau's experts state that the practice of wiring export apple and pear boxes has done much to cut down excessive breakage in transit.

A Big Event

Almost daily I hear of a notable gathering at Washington, D. C., or at Philadelphia or Denver or Boston, of a gathering of the distinguished men of a state or territory to witness the planting of a tree. A tree has recently been planted in honor of Pershing and one in honor of Foch, two great military men of modern times. Our colleges have a tree-planting day. Visit the campus and you will find records of certain trees having been planted at certain dates in honor of a certain day or date. There are many historical trees, such as the Washington elm. How can a day or a date be better celebrated than by the planting of a tree. When I first moved onto Green's Fruit Farm I went into the woods and dug an oak tree and planted it in honor of my wife's birthday. Many people plant trees to honor the birthday of each of the children.

There are various kinds of monuments, some of granite, others of marble, others vast temples like that in India, the Taj Mahal, but how much more simply and often more appropriate is the planting of a tree to commemorate the event. The man who plants an orchard on his farm is not only working for himself but for those who come after him. He is adding to the value of his estate as well as to its beauty. The poet has said that he who plants a tree plants hope. Few of us are too hopeful. Most of us tend to look upon the dark side. There is no monument so economical as a tree. —C. A. Green.

Budding the Trees

JAMES ROWAN, the veteran nurseryman, says that he meets with better success when he places the buds on his trees at budding time on the northeast side, which is the shady side. He says that when the bud is placed on the sunnyside of the stock the heat of the sun is liable to dry up the sap and affect the welfare of the newly inserted bud.—C. A. Green.

Finds Pomegranates a Profitable Crop

By James Edward Hungerford

EIGHT years ago, when J. W. Irwin of Linsey, Calif., shipped the first carload of pomegranates ever sent from this point to the eastern markets, many of his friends predicted "red ink". Such, however, was not the case, the car selling for fourteen hundred and sixty-five dollars in Chicago, and netting close to one thousand dollars. Since then, Mr. Irwin has shipped many carloads of pomegranates, all of which have sold for as much, or more, than the first car shipped. From this one carload shipment eight years ago, the industry in Tulare County, Calif., has developed rapidly, seventy-two carloads of pomegranates having been shipped from Lindsey last fall.

Eleven years ago, Mr Irwin interset his six-acre olive grove with pomegranate trees, and for the past eight years has been receiving an increasing yearly return. For the past two years, he received nine hundred dollars per acre for the fruit, figuring the six acres to be one-half olives, and the other half pomegranates; in fact, this portion of his eighty-acre fruit ranch has been the most profitable of all. This method of growing pomegranates in olive groves might solve the problem for many an olive grower during the period of low-priced olives, he says. Several growers have interset their orange groves with pomegranates, and have found it a profitable combination.

Experiments are now being made by the chief chemist of the Department of Agriculture at Washington, to produce the fast-color dyes from the peel of the pomegranate, it recently having been learned that the German fast-dye monopoly is based largely on a secret process of extracting the coloring matter from the pomegranate.

There is an ever increasing demand for this showy fruit. The soda fountain trade alone, Mr Irwin says, could be developed sufficiently to take care of all the pomegranates now grown. There is now a demand for the fruit by the manufactures of grenadine. The passing of the Eighteenth Amendment, in fact, has no more hurt the pomegranate industry than it did grape growing.

The missionaries coming from old Spain brought the pomegranate with them. The name is a French word which means, "apple of Granada". The fruit, Mr. Irwin says, ought to be cultivated more than it is, for the trees on which it grows may be planted in any waste corner of the farm, and require little care.

At the midwinter meeting of the New York State Cold Storage Association held in Rochester the end of February, Dr. L. A. Hawkins, of the United States Department of Agriculture, said that indications pointed to the fact that the failure of grape fruit to keep in cold storage, results from its having been treated like apples, whereas it should be heated to 60° before storing. Further experiments will be conducted along this line.

Manuring Trees

I'm planning setting 10 acres to peaches within the next few days and as it is altogether a new proposition with me, I'm writing you to get all the information, etc., I can, First, I want to know how deep the trees should be set? Should they be fertilized? If so, what with? (The land is what is commonly called "worn out sand field" with good clay subsoil.) M. L. B. Mississippi.

I ADVISE you to plant your trees one inch deeper than they stood originally in the nursery row. You can use barnyard manure at the rate of 20 tons per acre, scattering it broadcast after the trees have been planted, or, if supply of manure is limited put it in a ring about one foot from the tree. Do not place any of the manure against the trunks of the trees. Grow cover crops like soy beans, cowpeas, etc., between the tree rows and this will greatly enrich the soil.—Paul C. Stark.

Horticultural Digest

PERHAPS, next to vegetable gardening, fruit growers are the most intensive cultivators of the soil than any other class of agriculturist. They should therefore be interested in soil literature, and every fruit grower ought to have in his library one or two good soil books which he can use for general reference and which, during the winter time espcially, he can read to great advantage.

A very attractive, new soils book entitled "The Nature and Properties of Soils" by T. Lyttleton Lyon and Harry O. Buckman has just been published. This book is quite complete, having some 588 pages. The early chapters take up the problems related to the geology and physics of soils, taking up the relation of the soil to plants, soil forming, geological classifications, organic and colloidal matter of the soil, physical structure, water of the soil and control of soil moisture.

A discussion is given of such subjects as soil heat, soil air, soil solutions, soil acidity and the relations of liming to soil conditions. A knowledge of soil organisms is very important and these are nicely treated in two chapters. A thorough discussion is given in the last chapters of the book which will especially interest fruit growers. Such subjects as commercial fertilizers and the principles of fertilizer practice, farm manures and green manures, and the maintenance of soil fertility are discussed.

The book contains a great many tables and charts; it is written in a way that the average orchardist can understand and interpret and it should prove a valuable and interesting treatise to all interested in this subject.

The book is published by The MacMillian Company of New York, and sells for $3.25.

The Apple Tree

DR. L. H. BAILEY has brought out a delightful little treatise entitled: "The Apple Tree." It is written in the easy reading, pleasant style which is typical of all of Dr. Bailey's writings. He opens up with a very interesting little chapter entitled: "Where There is No Apple Tree," referring in all probability, to Jamaica where he spent some time. He then takes up the discussion of the apple tree in the landscape and gives a very nice appreciation of the apple tree. "Buds on the Twigs" and "The Weeks Between the Flower and the Fruit" are titles of other chapters. "The Brush Pile" which gives a study of buds and some phases of pruning, followed by a chapter on pruning. Chapter seven deals with maintaining the health and energy of the apple tree, a subject of great importance to every orchardist. Many people want to know how the apple tree is made from seed through the budding and grafting process. There is an increasing interest in dwarf apples and Dr. Bailey has devoted a chapter to that subject. Chapter 10 deals with the origin of the apple, followed by a discussion of varieties. One chapter is devoted to the grafting of trees, describing the common form of cleft grafting. The preventing of unseasonable decay and decline of the tree is treated in the chapter entitled "The Mending of the Apple Tree," while the insects and diseases come under the interesting title of "Citizens of the Apple Tree." "Apple Tree Regions," "The Harvest of the Apple Tree" and "Appraisal of the Apple Tree" conclude the book.

In all there are 112 pages and some very attractive illustrations. This book is published by the McMillan Company of New York and sells for $1.50.

Bordeaux Paste

ON THE Pacific Coast the best preparation for the treatment of wounds is Bordeaux Paste. It keeps the wounds moist, does not injure the tissue in any way and has a great deal of fungicidal value. Where cherry trees have been attacked by Gummosis, the old gum pockets can be cut out, disinfected with Bordeaux and the wounds filled with Bordeaux Paste.

This preparation is made as follows: Dissolve 1½ pounds of blue stone with one gallon of water in a wooden, earthenware or glass vessel. This can be nicely done by suspending the chemical in a loosely woven cloth bag. It is well to suspend near the surface of the water. If this is not done, the blue stone should be very finely pulverized and dissolved in hot water. Slake three pounds of quick lime with one gallon of water. When the lime is cold, mix thoroughly equal parts of lime paste and blue stone solution. The two solutions will keep indefinitely if not mixed.

Goodrich
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new tire prices
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Effective July 20th, Goodrich established a revised price list that is a base line of tire value. It gives the motorist the buying advantage of knowing that whatever size tire he selects is of the same quality—*the Goodrich one-quality standard.*

It gives him the longest mileage, the most satisfactory service and the highest quality his money can buy. Results will prove that it is impossible to buy tire mileage at lower cost.

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SIZE	BASE LINE PRICE	SIZE	BASE LINE PRICE
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31 x 3.85 "	15.95	32 x 4½ "	37.70
30 x 3½ S.B.	15.95	33 x 4½ "	38.55
32 x 3½ "	22.95	34 x 4½ "	39.50
31 x 4 "	26.45	35 x 4½ "	40.70
32 x 4 "	29.15	33 x 5 "	46.95
33 x 4 "	30.05	35 x 5 "	49.30

New base line prices are also effective on Goodrich Fabric Tires:

SIZE	BASE LINE PRICE	SIZE	BASE LINE PRICE
30 x 3 "55"	$ 9.65	32 x 4 S.S. (Safety)	$21.20
30 x 3½ "	10.65	33 x 4 "	22.35
32 x 3½ S.S. (Safety)	16.30	34 x 4 "	22.85

No extra charge for excise tax. This tax is paid by Goodrich

This revised price list affords the motorist a definite guide to tire prices as Goodrich Tires are the definite standard of tire quality.

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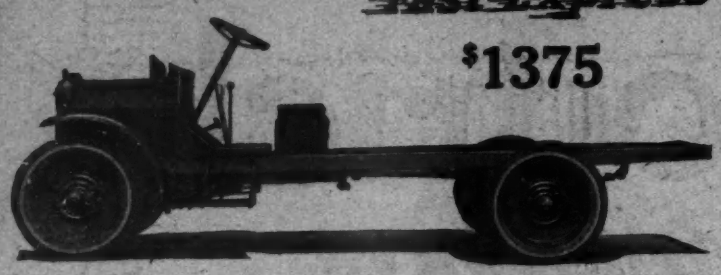
Summer Work

Weak and diseased limbs should not be allowed to remain on fruit trees during the summer. Bark beetles attack weak and slow growing limbs and finally destroy the entire tree. Cut the limbs out and burn them.

Cultivate the young and bearing orchards throughout the summer months unless they are to be planted in some leguminous crop in June. Peas or soy beans should be planted between the rows of fruit trees and the vines worked into the soil with a disk harrow in early fall. Two tablespoonfuls of nitrate of soda applied around fruit trees one and two years old will be very beneficial. Scatter the nitrate of soda in a circle about 18 inches from the body of the tree and work it into the first few inches of soil by hoeing.

Rub off all suckers or sprouts which appear on the trunk of the tree so as to concentrate the entire growth into the permanent branches. Summer pruning of newly set fruit trees should be done in June. This consists of removing surplus branches. After the young peach trees have made a growth of 15 inches, the tops of the branches that are to be permanent should be pinched out so as to force the limbs to branch. This will do away with the necessity of severe pruning next fall, and cause the trees to form a larger and more symmetrical head.

Grapes and apples should be sprayed with Bordeaux mixture every two or three weeks for the control of diseases which attack them and cause the fruit to rot.—Clemson College.



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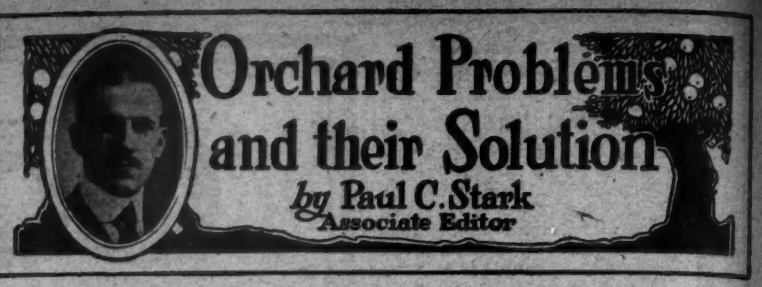

Wheel-barrow Sprayers

I have a summer place at La Porte, Indiana, on which there are about twenty-five fruit trees. Four Sour Cherry and two Pear trees produced bountifully last year, but the apples did very poorly. As near as I can find out, all of these trees were planted about 12 years ago and have been neglected for the past five years. Last year the sap started early in March—before I had time to get down and trim the trees—so I had to let them grow as they were. This fall I trimmed my old trees heavily and am about to order a 12½ gal. wheelbarrow sprayer and would like to ask if, in your opinion, it would be advisable to spray with scalecide for a dormant spray in the early part of March.

I had hoped to plant about twenty-five more trees this spring of the Stark Delicious and Golden Delicious types but I have come to the conclusion that it will be better to reclaim that which is already bearing, and be ready to set out the new trees this next fall. All of this work will be done week ends, so I do not want to start more than I can take care of properly.—C. F. S., Illinois.

I AM sending you an orchard and spray book that will give you full and complete information on pruning, spraying and general care of trees. For the number of trees that you have, a wheelbarrow sprayer should work satisfactorily, but be sure that you do a thorough job of the spraying and cover the tree thoroughly. Scalecide is a miscable oil that controls San Jose scale and other scale insects and I consider it very efficient for this purpose. It must be applied when the foliage is off the trees.

Either fall or spring planting would be satisfactory in your section of Indiana. However, about all the care that your 25 young trees would require would be about one day for planting and then cultivation with a hoe or a onehorse cultivator about once every ten days during the summer. If any of the leaf-eating insects get on your young trees, you could give them a spraying at the same time you spray your older trees and it probably would take you less than an hour to spray your young trees.

Effective Summer Borer Control

Is there anything to do in the summer time to control apple tree borers? If so, how do you do it?

SOME of the most effective borer work is done in the summer time. Some growers follow a practice of painting the young tree trunks with some soap solution or other deterrent solution that will not injure the tree but will help to keep the borers from laying the eggs on the young tree. However, I have found one of the most important operations in preventing borer damage is to carefully inspect the tree trunks in latter part of August or early September when the young borer can easily be located by the discolored bark and castings. At this season, it is very simple to nick out the borer with a sharp knife and with practically no injury to the tree.

Temple Orange

Do you know anything about the Temple Orange? Does it have the superior quality claimed for it?—J. T. M., Florida.

I HAVE never seen the Temple Orange on the trees in the orchard but I have carefully examined the fruit. Last March I tested some samples of this variety and although I am not as familiar with citrus fruit as I am with deciduous fruits, I believe I do know *quality* in a fruit. The Temple Orange is the best orange I have ever tasted. The peeling separates easily and fruit is heavy and filled with most delicious juice. If my apple orchard was an orange grove, I should certainly have some Temple Oranges.

Raspberries

I have a growth of black raspberries, also red ones, which I desire to thin out by re-setting of roots—not the tips. Little pruning was done on the canes last summer after fruiting. Kindly give me detailed instructions as to when and how this re-setting may best be done. What culture and fertilizer for best results?—W. D. S., New Jersey.

WE INFER that you desire to transfer plants from bearing block to new propagating blocks. This should be done in March for cane plants. Transfer only plants of the past season's growth. Use spade for digging plants. Rows should be 6 feet apart and plants should be from 3 to 4 feet in row. Black raspberries should be tipped the previous year and the tips used for planting the following early spring. You can't hope to get satisfactory results from old plants. After planting, the cane plants should be cut back to 12 inches.

Hardwood Ashes

Please inform me under head of Orchard Problems whether hardwood ashes is beneficial to young apple, peach, plum, and cherry trees? If so, when is best time to apply it?

Please tell us what you know about the Ingram apple. Would like a full description of the apple and also the tree. Am informed that it is a very late bloomer. If so, is not this an advantage? Is it adapted to this locality?—T. L., Missouri.

HARDWOOD ashes are very beneficial to trees as they furnish potash and other necessary elements of plant food. You can apply it at any time. It will also act as a mulch. The Ingram apple is of the Jeniton (Ralls) type, is a late bloomer and the fruit is a good keeper. The tree is very upright. The fruit tends to run small and the quality is only fair. Some growers consider it a good variety but it is not being planted very heavily at present. You might plant a moderate number of them but I would advise you to consider carefully before planting heavily of Ingram.

Mulch On Young Orchards

Is the mulch system all right for three and four year old apple orchards? My land washes badly and I want to stop cultivation if I can do it without injury to my trees.—R. L. B., Ohio.

PROPERLY handled the mulch system is all right. Some people fail with it because they abuse it by making it a paying proposition instead of a mulch. The vegetation that is cut should be raked around the trees—not hauled to the barn for hay.

On steep, washy locations, I advise mulch system particularly after the trees have made a good start in the first several years after planting. I am using the mulch system in my three-year-old orchard, having sown sweet clover and vetch. After several years I expect to get it almost entirely in sweet clover which has a number of advantages as a mulch crop. If sweet clover is cut frequently, it will stay green and tender all summer. It is a splendid soil enricher, adding much nitrogen. It's roots are very large and go deep into the soil thus making much of the plant food in the subsoil available. In southern Illinois orchard regions, the growers have found sweet clover a splendid crop for their steep orchard lands.

One warning that should be heeded when using the mulch system is to clear the mulch away from the base of the trunk at least 12 inches, otherwise it will furnish protection to mice and possibly mice injury.

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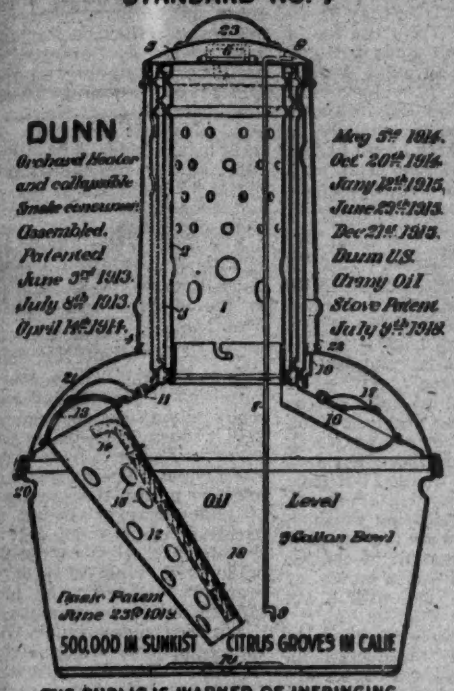

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DODGE BROTHERS

New Places and People

(Continued from page 7)

it looks GRAND. And did the King and Queen look GRAND as they drove down the "long walk" from the castle to the races? That depends perhaps on whether you look through American or English eyes. They look very much like the rest of us. His Majesty did raise his hat most graciously to the crowd that stood with bared heads, and Queen Mary held her head with the erectness which we have learned from the Sunday supplements to expect of her.

All Alone in London

Only once did I venture out all alone in London. That was when I decided to visit the portrait exhibition of the Royal Academy and my best beau suddenly discovered that he had urgent business "with a man." When I reached our distant hotel quite safely on my return, I was as proud as Cook when he came back from the North Pole, and with neither more nor less cause. My heart had quailed but once and that was when, my solitary lunch at the exhibition rooms being finished, I had to make a swift and uneasy reckoning as to the amount of change I should expect out of 'arf a crown, or a Florin and one shilling with a six penny tip.

However, the waitress seemed an extraordinarily good mathematician and generous withal. I got back more change than I looked for. Perhaps her heart had been warmed by her own ardent desire, which she imparted to me, to "visit the States." Now how do you suppose she knew where I came from? I can only think she guessed it from my bewildered look when she solicitiously inquired whether Madam would "have a Guinness with her chop." Or it may have been when I didn't know just what to say when she asked whether Madam preferred black or white coffee.

So Much to See

So much had been done and so much remained to do, that our last day in London was a bewildering succession of interests from the morning start to Windsor and the afternoon excursion to Hampton Court, to the late afternoon, but still sunshiney visit to Kew Gardens.

Probably you know, but I didn't, that the great Cardinal Woolsey built stately Hampton Court for his own delectation and was later persuaded, quite forcibly it is said, to bestow this palace of 1000 apartments upon his sovereign Henry VIII. Even this truly royal gift failed to retain for him the favor of his capricious master and, if we may believe William Shakespear, led him to make to his pupil Oliver Cromwell the pathetic and noble plaint—"Ah Cromwell, Cromwell, had I but served my God as faithfully as I have served my King, He would not have left me in my gray hairs to the mercy of the enemy."

Some persons express disappointment in Kew Gardens. This must be because they do not realize that the English sometimes employ the term garden, with as much reason as we advertise a new residence district as Morningside Heights or Park View when there is no height or park view to be seen. Yet the flowers at Kew are worth the visit, particularly the glorious rhododendrons which exceed in beauty any show of blossoming shrubs I have ever seen, unless it be the little known and much admired azaleas of Magnolia Gardens near Charleston, S. C. The park of Kew Gardens is entirely delightful with the finest English trees, and trees in England show, besides noble girth and height, a certain massive density of foliage beyond any that I have seen in 48 of the United States.

The Pleasant Tea Habit

But what also fascinated me at Kew was the row of tea houses just outside the gates of the gardens. Tea houses in and around London are "thick as autumn leaves in Val Ombrosa," and the most inviting of all stood in a pretty row along the curving sidewalk, each with bright flowers in front and the door wide open to allow a glimpse of a deep back garden dotted with tables and sloping down to the Thames.

"Fresh salmon and cucumber salad" was the special lure tacked up on every gate. Strawberries and cream were also seductively offered. As we had recklessly ordered these for luncheon, presuming on the information of our morning Times that the strawberry season was at its height and strawberries might be had for eight pense, and had obtained exactly eight berries for the equivalent of 25 cents, we refrained at tea. The Times had been wise not to state that the eight pence named would not purchase just five and a third berries. We worried quite a bit over the third, but then English money is certainly confusing to the dollars and cents brains of Americans.

Slow But Not Sure

The English are conservative. It may be well that all nations are not so ready as we to adopt modern methods, yet it does seem that some of the ways they cling to have little to recommend them. Their method of handling luggage not only consumes a quantity of unnecessary time but makes it a question of the honesty of fellow travelers whether connection shall be made with rightful property at the journey's end. To the honor of the British public, be it said, we lost none.

We saw many trunks destined for the continent, fantastically striped and banded so that, as with branded cattle, the owner may recognize what belongs to him. Many a good laugh have we had as we coursed rapidly down long platforms after a trundling trunk man so as to be sure that our pieces were first identified and then placed on board.

This latter was dependent upon personal supervision and so far as we could see there was nothing to prevent our selecting any trunks that might appeal to us and having them transported to our hotel or next destination.

Start Early for Trains

To race the full length of a very long train, see the trunks aboard and then pass back along the passenger coaches, poking the head in at every opening to find out to which of the innumerable little compartments each own name is attached, is apt to bring it breathlessly close to the minute of departure. Your name being located on the door you enter the compartment and sink happily into the seat that has S. Adams, or J. Jones pinned to the cushion. Naturally, if you wish to be sure of having a seat, you take the precaution of reserving it.

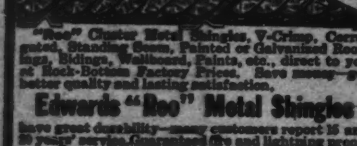
And this is one of the many ways in which the inexperienced voyager is aided by the various travel bureaus of the American Express, Cook, Bennett, etc. Even if, as in our case, you do not wish to place yourself entirely in their care and take a personally conducted tour, you will find them most obliging and efficient in seeing after many details such as providing railroad tickets, reserving seats, engaging hotel accomodations, or in arranging schedules that fit in with your plans. These bureaus are to be found in all places of any size, and can be heartily recommended to the traveler whose independent program calls for more experience than he possesses.

Drilling Cover Crops

IN THOSE sections of the United States where it is not too late to plant a cover crop, it is well to remember that much better results can generally be obtained by drilling in the seed, using an ordinary grain drill. The seed will germinate much more rapidly than if sown broadcast, and will give a more even stand and is not so apt to dry out.

Pecan Scab

ACCORDING to reports coming from the Mississippi Experiment Station, it is shown that Pecan Scab can be readily controlled by the application of four or five sprays of Bordeaux. These should begin when the nuts are first formed.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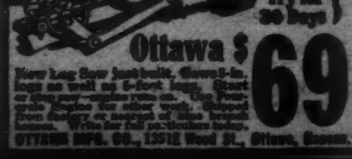
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The Young Farmer as a Fruit Grower

By Ruby Anna York

THE young Kansas farmer is the hope of his state and he is admired and looked to as the one honored individual who will hold up his state's agricultural standard, and it is sincerely hoped that he will also continue, or rather revive fruit growing.

I was buying apples recently in my home town in eastern Kansas, in the early spring and paying as much as fifteen cents per pound for small apples of doubtful quality, not home grown. The shop-keeper said, "It's a shame that we have to sell apples at this price; I was raised in this county (Coffey) and twenty years ago my father sold apples to the local dealers; now it is impossible to buy home raised apples, the young farmer is negligent in fruit raising." I was obliged to acknowledge this as being true; the good orchards seem to be passing with the older generation.

Fruit Is Profitable

The young farmer should take a new interest in fruit growing and make it an important side issue to other farm crops. There is a better market and more uses are made of fruit now than twenty years ago. The shadow of the past war demands that more perforce must be produced than ever before, and this production must include fruit, and it is up to the young farmer to produce it. There is no better time than now to put out an orchard.

Kansas is distinctly an agricultural state, also an ideal place for fruit growing and the young farmer is the one to hold up the banner. The young Kansan would do well to stick to farming and fruit growing, there is no individual who is more to be admired than a prosperous farmer. He is the happiest of men of profession and gets more unhampered, wholesome enjoyment out of his life's work than any other business man.

The young farmer's capacity for doing things lies largely with himself, the amount of energy he puts into his work determines his success. The young farmer and fruit grower, when he starts out on his career should take an inventory of his ability, sum up his unspent energies, they are many; value highly the gifts with which he has been endowed, they are worth thousands; and think of the magnificent position he can hold in shaping the destiny of his state and country, it is truly worth striving for.

Kansas is a good state for fruit growing and there are a number of commercial orchards that are making fruit growing an important industry; but there is room for much more fruit growing, every farm in Kansas should have its orchard.

The first orchard in Kansas was planted in 1837 at Shawnee Mission. However, very little orchard planting was done until about 1865. Kansas plains were a long time regarded as unfit for fruit growing. Kansas is indebted to Frederick Willhouse for much of her fruit growing industry and success. Willhouse came to Leavenworth county, Kansas, in 1859, and was engaged in the growing and sale of fruit trees until 1876, when he engaged in the commercial orchard business. He specialized in apples and was known as "The Apple King." He planted over 1,500 acres of apple trees, and gave much of his time to experiments to determine the varieties best adapted to Kansas.

Kansas climate is especially adapted to apple raising and many other fruits do well, namely, pears, plums, grapes, peaches, apricots and cherries. These should be grown in all orchards. Practically all small fruits do well in Kansas. The growing of fruit for home consumption should be encouraged. The young farmer should raise fruit for home use and enough choice fruit for local markets.

If the young farmer will do his part we should in ten or fifteen years, see the passing of the "refrigerator fruit car" and the familiar sight of farm vehicles lined up waiting their turn for crates and baskets of fruit.

Fruit growing like all other lines of farming goes hand in hand with hard work. The success of an orchard depends upon the amount of energy you put in it. Tillage, pruning, spraying, fertilizing and proper handling and storing are absolutely essential to fruit growing.

Increase Value of Farm

An orchard adds much to the value of a farm; the children love the farm home better, the tender memories of the old farm orchard always cling to one in after years. A good orchard guarantees a good, well kept table; a good orchard also brings fellowship, you have more company, more friends and you are a better neighbor when you have an orchard.

The first requisite in starting an orchard is to get good trees from a reliable nurseryman. Select varieties of fruit best adapted to your section of the state. If in doubt as to the variety you can secure such advice from your nurseryman. Find out what varieties of each fruit bring the highest prices and which varieties are most in demand if you want to build a commercial orchard.

For the amateur, fruit growing in a small way would be advisable, and increase your acreage as you learn and experience more, if you care to go into fruit growing extensively.

The best way to get the fruit growing spirit is to send away for a number of nursery catalogues, nursery price lists, and state bulletins on fruit growing and read them thoroughly, attend farm meetings, visit prosperous commercial orchards if possible, talk with fruit growers and become interested. In the course of time you will learn much that you never knew before.

Protecting Against Sunburn

IT IS not generally known that the exposed limbs of a tree are hotter than the air. The following table shows the maximum temperatures on exposed peach limbs at Davis during the summer of 1920.

Maximum Temperatures on Exposed Peach Limbs

Column (a)—Hottest Day, August 10th.

Column (b)—Average, July 9 to September 7.

	(a)	(b)
	deg.	F.
Air temperature in shade	116.6	97.5
Whitewashed trunk	118.4	99.9
One year wood	120.2	103.5
Main limbs (not whitewashed)	133.0	114.4

It will be noticed, during the hottest part of the day, the exposed main limbs averaged 16.9° F. warmer than the air temperature. The cambium layer (the growing region between the bark and the wood) is very likely to be injured by such high temperatures.

Whitewash reflects much of the heat, and keeps the limbs at more nearly air temperature. The following is a formula for a whitewash that will stay on better than the ordinary whitewash:

Fresh rock lime..........10 lbs.
Salt .... 1 lb.
Flowers of sulphur......½ lb.

While the lime is slaking add the salt and the sulphur, mixing well, later thinning to the desired consistency.

Nursery trees should be whitewashed immediately after planting. The trunks and the base of the main limbs of the older trees should be whitewashed once a year. Just how high up one should whitewash will depend upon the density of the tree and to what extent the main limbs are exposed to the sun.

Whitewash is of little value except in preventing sunburn. It is not definitely known that it will destroy insect eggs or fungus spores which might be on the trunk or main limbs. It has, however, been shown to be a very good repellant against the flatheaded apple tree borer if applied in May or June and again in July or August.

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Large or Small Pecans

MR. SAMUEL H. JAMES of Mound, La., one of the largest and most successful growers of pecans, tells me in a recent letter that the pecan known as the C. A. Green, though of only moderate size, is thin-shelled and is considered one of the best, or possibly the best, in quality of all pecans. Mr. James says it is strange that after all these years of experience the American public will judge fruit and nuts by their size, wheras you and I, who have spent a life time in fruit and nut growing, know better than to judge them by their size.

Nitrate of Soda for Apple Trees

MY FRIEND, Samuel H. James, has received an interesting letter from one of the most successful fruit growers in this country, one of the wealthiest men in the north. Mr. Wright, the gentleman alluded to, has been using as high as eight or nine pounds of nitrate of soda around each apple tree each year, scattering it broadcast so far as the branches extend. The results have been simply marvelous. Mr. James says that while he has used nitrate of soda in his orchards he never has used such enormous doses.

I will be glad to hear from other orchardists as regards how much nitrate of soda can be applied profitably to apple trees. It must be taken into account, however, that some soils will require more nitrate of soda than others.

Killed with Kindness

A SUBSCRIBER received trees from the nursery in good condition. The trees were thriving, but in order to make them still more thrifty the owner dug away the soil about the roots soon after planting and applied a wash composed of sulphur, lime and other ingredients. A considerable portion of the trees gradually faded away, but some of them are alive now. He asks for advice.

C. A. GREEN'S reply: The application of washes such as our friend mentions, or even the application of fertilizers on or near the roots is a dangerous proceeding. I do not advise applying anything to the roots of trees except good clean soil. My opinion is that if you had not attempted to doctor these trees they would all be alive at the present time. Bear in mind that the roots of trees are far more sensitive to injury than the branches.

Why some of your trees are alive now and others are not would be difficult for me to state further than I might assume that more soil was removed from the roots of the trees that thrived than was removed from the roots of the trees that did not survive. Then again some varieties may be more susceptible to injury than others.

You would be surprised to learn how many planters lose their trees through attempts to benefit them. I heard of a successful business man whose newly planted vines were not making as fast growth as he thought they should, therefore he dug up these plants and washed them (roots and all) with a concoction of soap, water and nobody knows what all, feeling that by this means he would destroy any injurious worms or fungus. After this treatment he replanted the vines and as might be expected they all perished, whereas if he had left the plants alone they would probably have been a success.

Cultivating Wet Soil

AS I WAS passing near my garden rows planted wide enough apart to be cultivated with a horse and cultivator, I saw that my man had cultivated the soil when some parts of it were wet and sticky. I called his attention to this condition and stated that I was surprised because the man who did the work was born and brought up on the farm and should have known that the cultivation of wet soil was a very serious injury to any plants or trees growing therein.

I have found that lumps of any soil but sandy soil left after the cultivator has gone through the rows have, when hardened by the rays of the hot sun, turned into something like pieces of brick and would not become pulverized throughout the whole season. It would seem to be so simple an affair as to require no attention, this cultivation of wet soil, but my experience shows that many cultivators do not appreciate the loss that must of necessity occur by cultivating, plowing or in other ways moving the soil when it is not dry enough to crumble before the teeth of the cultivator. Some people excuse themselves for cultivating wet soil by stating they are behind with their work. There are various excuses. Some times one part of the field may be dry enough to cultivate and the other not dry enough, but the cultivator is rushed through the wet part the same as the dry and the growth of the entire season is thus delayed and the crop greatly reduced.

That Famous Pear Orchard

I OFTEN drive past a pear orchard which is probably the most productive and profitable in this country if not in the world. Sometimes I get out of my carriage and stroll through the orchard with the owner in my effort to learn how he meets with such notable success.

This pear orchard has been in bearing many years, having been planted about twenty-five years ago. The trees are low-headed. This has been brought about by cutting back each year one-half of the new growth of the previous year. It is not easy to explain methods of pruning with the pen. Yesterday the owner of this pear orchard said that in pruning, if there were three shoots being sent up from the top of a certain branch, he would cut back two shoots about half their length and leave the other shoot for bearing fruit, which seemed to me peculiar and almost startling, for the average pear grower would feel like cutting back all of the shoots and would not understand why one shoot was left for fruiting.

On May 15th I saw that plowing had been commenced in this pear orchard May 10th. Usually he plows earlier than this. The plowing was about as shallow as it is possible for a plow to run. In no instance did the plow run deeper than three to four inches. The ground has been kept cultivated each year up to about August first, but no attempt has been made to cut out every spear of grass. I mention this fact because I have seen orchards so carefully safeguarded that you could scarcely find a weed or spear of grass in the whole acreage. Such cultivation as this in orchards is not necessary. Mr. Bell, owner of the pear orchard I am speaking of, remarked that he had one Seckel pear tree from which, as near as I can remember, he said he picked twenty-five bushels of pears in one season and yet the tree was not a large tree. Pear growing should interest more fruit growers, it has a very bright future for those who will make it a study.

WITH THE CO-OPS.

ONE of the greatest problems facing the cooperative organizations is the question of pooling. Probably no set rule can be drawn up for pooling which will apply in all cases. Under some conditions, pooling is based on season—for example, in some of the valleys of the Pacific Northwest—in the Walla Walla Valley for example—the prunes from the hillsides come early but do not produce as heavily as the prunes from the bottom lands which come later. The early shipped prunes are pooled by themselves—thus the average of the grower producing the early fruit is apt to be fully as good as that of the grower on the low land with a heavier crop.

In many sections Bartlett pears are pooled by weeks or certain dates, as the market fluctuates tremendously. Some organizations are considering making date poolings for certain varieties like Gravensteins, Winter Bananas and Jonathans, thus penalizing to a certain extent the grower who will not pick his fruit early and get it packed out to the best advantage of the salesmen.

In some sections they are making two classes of fruit (carload lots and less) in attempting to pool fruit which comes from orchards making solid cars with a car which may come from as many as twelve to fifteen different orchards, as it is felt that the fruit is much better standardized. When it is packed from one orchard the fruit is apt to be more uniform in ripeness and general condition than where it comes from a dozen orchards. Of course, it goes without saying that whatever system of pooling is adopted, the grades must be kept separate, such as extra fancy, fancy and "C" grade, and it is customary also to make the pools according to size. On apples, for example, that are packed in boxes, one pool may include 88's and larger, the second 96's to 138's, the third 150's and 163's, while the fourth would include 175's and smaller.

Managers of associations will have to work out to a large extent their own system of pooling, according to conditions along which they are working. It is a subject which requires very careful thought and analysis because it has been a subject upon which some cooperative bodies have practically gone to pieces. It must be worked out to the general satisfaction of the members and it is well, perhaps, to let the members themselves, in mass meetings, very largely draw up the type of pooling which they themselves desire.

BUILDING a reserve is one of the most important steps for any cooperative to undertake. Many of the large, private corporations of the United States have lost millions the past few years. We heard of one meat packing organization which lost over twenty million dollars and one big cannery concern, international in scope, that dropped some twenty-two millions a year ago. Such concerns could not possibly get by unless they had more or less of a reserve.

During the past three years some concerns have been practically living on their reserve and if they had not had the foresight to establish it, they would have gone bankrupt long ago. A reserve can generally be built up easily by setting aside a small amount from the sale of each package of fruit, and perhaps one of the wisest ways to work this is to make the reserve correspond somewhat with the selling price—that is—those grades and packages which sell for the highest price should contribute somewhat more to the reserve than the low-priced fruit.

Perhaps one of the most successful organizations in building up a reserve is the Hood River Apple Growers Association. Under the careful management of Mr. A. W. Stone, their General Manager, they had built up, over a year ago, a reserve in excess of $300,000.00 and this reserve is still growing. Holding a reserve of that nature means financial stability; it means financial backing on the part of bankers and the concern that has saved a hundred thousand dollars reserve is in splendid position to pay cash in buying supplies like boxes, nails, barrels, etc., and is in splendid position to get the very best market considerations at all times, and to not only buy but to conduct its business in the most approved fashion. Your organization may not need a reserve of a quarter of a million dollars; maybe a few thousand dollars is all it requires, or it may mean it is so large that it needs millions, but at any rate it should be the concern of managers and directors of all cooperatives to see that some definite policy for building up a reserve is followed out.

WE WISH that the officers of the various cooperative fruit marketing associations would feel free at any time to send us interesting notes concerning their activities, such as new plants which they are building, amount of tonnage they are handling; any special marketing experiment they may be trying will be of interest to the fruit growers in general, who are members of other organizations.

We hope, from time to time to be able to visit a great many of the cooperatives and to assist them in any way that we can in making their work a success. Meanwhile we shall appreciate your very hearty cooperation in trying to make our department "With the Co-ops" of great benefit to the cooperative movement.

There is seemingly a need in this country for a national organization of cooperatives, where a convention could be held once a year and representatives from the various cooperative fruit marketing organizations could meet and discuss their problems. Much help could be given to the entire cooperative movement by such an organization. Pitfalls and mistakes could be avoided and a general policy could be worked out for the cooperatives, their relation to the consumer and to marketing in general. Sections could be provided where such subjects as standardization, distribution, advertising and finance could be treated, as well as problems of organization, types of contracts and others too numerous to mention.

The cooperative movement has come to stay; it is going to grow stronger and stronger as the years pass and there are many lessons that can be learned from almost any organization, which would be of great interest to the cooperative bodies in general.

THE California Prune & Apricot Growers Association recently made their third payment on their 1921 prune crop. This was in excess of one million dollars and it means that the members of the association have received more for their prunes already than ninety per cent of the outside growers have received, and yet the association has a final payment to make.

Certainly, cooperation has been a great boon for the prune and apricot growers of California.

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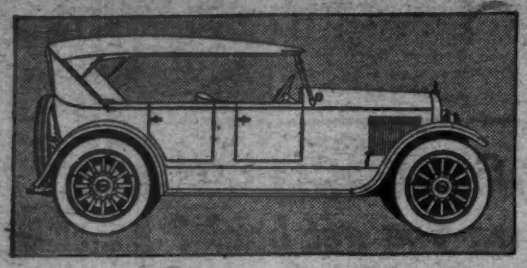

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MARKETS AND MARKETING

The British Market

THE British market opened up fairly strong last fall—in fact surprisingly so, considering the large percentage of unemployment in that country and also the inability to re-sell much of the fruit on the continent. The small barrel crop tended to increase very materially the export of boxes. Figures are not complete yet for the entire season of 1921-22 but figures for 1919, 1920 and 1921 are available:

1919 — Apples — 1,298,130 barrels, £3,715,628 imp. value.

1920 — Apples — 1,385,710 barrels, £3,723,094 imp. value.

1921 — Apples — 1,390,116 barrels, £3,343,749 imp. value.

Early Slump in Market

Soon after the opening of the English market there came a very serious slump and there was considerable fruit shipped from the Pacific coast which would not pay for the carrying, packing and freight; however, the market began to gradually recover and distinctly improved up to the last of March, at which time the Australian fruit appeared on the market. At that time there was a material strengthening of the market—apples selling in the neighborhood of twenty shillings. There is always a strengthening at the time the Australian apples first reach the market. The strengthening of the foreign exchange was also a very important factor this past year and brought back a great deal additional money to the American exporter.

Pacific Coast Development

For the first time large shipments of apples were made by steamer direct from Seattle and Portland to the United Kingdom. There was some apprehension concerning the sailing at infrequent intervals of steamers carrying unusually large loads, and before the season was over this apprehension was well founded, for within one week's time two steamers landed over in England carrying over 300,000 boxes of apples.

A very large percentage of English apples are sold by auction, some by private treaty, and a relatively small amount of the fruit is stored. The auction markets were badly overcrowded and the markets tended to break after the heavy receipts described above.

Seemingly, the British system of distribution is not as well developed as that in the United States. If the exporters could pool their shipments for the entire year, the results on the whole would be satisfactory. Unfortunately, it is not always possible to do this as pools generally have to be made up on variety and grade.

The freight by way of Portland of $1.24, includes the local inland freight, as well as the ocean freight, the latter being only $1.00. The difference in the insurance charges by Portland and New York is more in the type of insurance taken out, the new insurance this year including all classes of deterioration, whereas the 3c rate of 1920 did not cover all such deterioration. This table is figured at a British exchange of $4.25.

There is a feeling on the part of a few importers that disbursement charges which generally run around 40c to 50c a box, can be materially reduced. Other importers feel that they cannot be reduced. Some think the remedy would be to ship to New York by water, store and reship in small amounts. A very attractive rate is offered in this way and there would practically be a guarantee against too heavy shipments reaching the other side—but on the other hand, there might be the danger of not being able to get adequate shipping facilities at the time needed. The steamers always hold off apples until the last but prefer not to carry any if they can help it.

Some of the shippers feel they ought to have their own representative in England. The reaction from this might be quite severe, however. If an attempt is made on the part of American shippers to revolutionize the system of doing business in England, the British receivers might retaliate by buying about all of their fruits from the Colonies—in fact, boycotting American tonnage.

Feed Market Gradually

All agreed that this coming year the market must be fed more gradually, an attempt is being made on the Pacific Coast to build up large cold storage plants at shipping points so that the fruit can be held nicely until it is desired to ship the same. An attempt will also be made to get more frequent sailing of vessels, such vessels to carry relatively smaller loads of apples than they did the past season.

The shippers on the Pacific Coast have appreciated the fact that a number of the big English importers have opened western offices and put salaried representatives in the field that come in contact with the shippers. There is an attempt also being made to work with California so that oranges can be taken on the same steamers; however, apples seem to carry fairly well in ammonia and brine cold storage, whereas the orange seems to do better under a ventilated cold storage system. Apples can be shipped in meat carriers but the oranges cannot well be. Lower rates are still needed over the steam lines and there is every hope that they will be secured. With lower rates, better shipping facilities, more frequent sailings and smaller cargoes for one sailing and a reasonable reduction in the disbursement charges, western shippers will be more inclined to help build up an export trade.

Experiences on the Pacific Coast indicate this past year that the bulk of the shipments in the future should be Spitzenbergs, Newtons and Winesaps and perhaps less Jonathans and not very many varieties like the Grimes or Ortley. In fact, under the present system of refrigeration, there seems to be some difficulty in preventing scald on these varieties in transit. Some markets, like Scotland, will seemingly take quite a few of the red, less better known varieties.

	Disbursements per box London	Insurance per box	Freight per box	Strapping	Total
Via Portland, 1921	.24	.10	1.24	.05	$1.71
Via New York, 1920	.30	.03	1.74	.05	2.13

Cost Thought Too High

There is considerable dissatisfaction on the part of many growers in the Pacific Northwest concerning the export market. The claim is that the costs are too high and it would seem that perhaps this claim is well founded. Considerable money, however, was saved this year by their shipping by water direct from Portland and similar ports to Great Britain, or by re-shipping by water by way of New York, as compared with overland figures. The above table is of interest.

The Orchard Home

A Section for All Members of the Family

Edited By MARY LEE ADAMS

What a Woman Has Done

WE LIKE to show appreciation of the worth-while things that women have done, consequently we were particularly glad in the past few months, to welcome Lady Astor of Virginia and England. According to her own statement, she came to America last spring to make a visit to her old home, but when she arrived, she found such a demand on the part of the people to hear her, that her visit was converted pretty much into a speaking tour.

Long distinguished for her social qualities, Lady Astor first attained something like public recognition through the hospital which during the war she maintained for Canadian soldiers on the Astor estate.

Later, as the first woman member of the British Parliament, she has worked steadily for the best interests of the working people, has stood for prohibition and has exerted a marked influence in promoting good feeling between England and America.

It was heartwarming to witness the generous admiration and friendship apparent for her at the great banquet which was tendered in London by the English Speaking Union to this brave and brilliant daughter of Uncle Sam on her return to England. The speech which she made on this occasion overflowed with enthusiasm, idealism and mother-wit, and was as simply delivered as if she had been speaking to friends from the colonial porch of an old Virginia home. She dwelt largely upon the greatness of America. Her loyalty to the land of her birth retains our affection, and her love of England wins theirs.

August On the Farm

THERE'S a little sinking of the heart when we see that summer is passing so swiftly. The days of longest light have gone by and soon we shall be reading around the evening lamp. Summer is saying farewell and taking with her the wealth of blossoms, the deep green of woodlands and the songs of birds.

Yet, when these joys are behind us, what treasures the autumn days have to offer, the ripened fruit to gather, the brown fields to garner, the brilliant autumn foliage to gladden the eye and the brisk coolness of autumn air to refresh us after the heat of summer.

How blessed we are in that every season as it comes has its own joys and compensations. I sometimes wonder how it would be to live in the latitudes where there is no spring to long for, no winter to battle with, no autumn to make the blood leap, but just one long uninterrupted summertime.

The Retired Farm Woman

THE retired farmer is proverbially a bored and dissatisfied human being and, to a less degree, the retired farm woman shares this reputation. The less degree is attributed to the fact that, amid new surroundings and with greater leisure, the woman takes more kindly to the interests of her neighbors than her husband is inclined to.

If this interest is merely a gadding, gossipy one, it is hard to believe that it will not soon wear itself out and prove to be as unsatisfying as the more solitary idleness of the man, but if the increased leisure be taken as an opportunity for wider helpfulness, there is every reason why such a woman's life should broaden and brighten.

The active farm woman has, in her time, wrestled with hard problems. These have concerned chiefly her family and her more immediate neighborhood. If she has brought to their solving wisdom, patience and, above all, good will, she has taken the best training imaginable for a larger, we cannot say a deeper, service.

Whether in town or country she will find the harvest ready to her hand. Good women, thoughtful women, helpful women are needed everywhere to serve the need of the world. Farm women have the right to retire, and surely if hard work entitles one to a degree of leisure, they have the right to leisure, but no one has the right to idleness.

The Homing Instinct

WITHIN some weeks now we shall witness one of the most interesting sights in nature, the gathering together in flocks of the migratory birds preparing for their long journey. And here is one of the mysteries. The thermometer may call it still summer, but the shortening days have warned the feathered folk that they should soon be on their way.

How do they know where they are going? And even more wonderful, how can they find their own particular nesting place in all this wide universe when they return to their summer homes? A nest, a tiny speck, hard to find even when one knows just which tree or bush to scan for it. Yet the little wanderer will year after year, pick out the same twig on the bough of the big tree in the great forest. In the one forest of all the many forests, the one country of all the many countries.

Straight home they come flying over seas, mountains and fields. The robin to his favorite oak bough, the peewee to her station under the eaves, the sparrow to the same rose bush and the dainty wren to her tiny house placed especially for her in the crotch of the dogwood tree. Even the hard headed wood-pecker goes to that hole in the old apple tree where he was happy the year before.

The Road of God

ALL ARE looking for it and probably it is not meant to be so very difficult to find as most people think. It's encouraging to have the biblical assurance that "Wayfaring men, though fools, shall not err therein." But, having found God, some are inclined to think that no way but their way leads to Him, and that those who do not follow them are displeasing in the sight of the Lord.

I heard lately a lovely little sermon on intolerance from a Norwegian who was speaking with deep feeling of his dear old mother. She was everything to him through his boyhood. Always an admirable Christian woman, she, like the generality of those born and reared in narrow surroundings, thought that the way of belief of her forefathers was the only righteous one.

Then one day she read that work of a great Norwegian poet which closes with words something liks these: "Wherever we see good people walking, there is the road of God." She closed the book softly, rose and went to her doorway and stood quiet, looking out over the beautiful world lying before her. At last, quite unconscious of any one near, she murmured to herself, "Yes, I think he must be right. 'Wherever we see good people walking—there is the road of God.'"

Wit, Wisdom and Verse

GIRLS, here's another almost irresistible appeal to enter the movies. Herb Rawlinson, Universal star, says, "One has to use so many changes in a picture and seldom can a suit be worn in two films. At the end of a picture I find myself stocked with four or five perfectly good but unavailable suits." If these things are done by mere man, what may women expect?

"POPPA," sighed Phyllis, "I'd certainly like to know this Mary Doe. She must be a regular vamp. I see her named as correspondent in nearly all the divorce cases."

I say to thee do thou repeat
To the first man thou mayest meet
In lane, highway or open street,
That he, and we, and all men move
Under a canopy of love
As broad as the blue sky above.

ORDER means peace for the home, sanity for the mind and security for the state.

THIRTY years brought a 50 per cent increase in the average number of eggs produced by each hen in New York state. It pays to educate hens.

Somebody wants what I've strength to supply;
And somebody's waiting for me
To come home tonight with money to buy
Her bread and her cake and her tea.
And as I am strong so her laughter will ring
And as I am true she will smile.
It's somebody else for the toiler or king
That makes all the struggle worth while.
—Edgar A. Guest.

Somebody wants a new bonnet to wear
Somebody wants a new dress
Somebody needs a new bow for her hair
And never the wanting grows less.
Oh, this is the reason I labor each day
And this is the joy of my task
That deep in the envelopes holding my pay
Is something that somebody asks.
—Edgar A. Guest.

A NEW invention tested in New York permits simultaneous telephony and telegraphy through a single set of apparatus.

A Complete Line—Backed by an Unequaled Service Organization

The profits of any business are closely related to the effectiveness of the hauling equipment used. Many lines of business demand a truck combining the sturdiness and endurance of the heavy-duty truck with the flexibility and speed of the touring car. Such a truck may be the exact equipment needed for your orchard or farm.

The Model S INTERNATIONAL SPEED TRUCK meets this demand. It is designed and built from the ground up to serve as a truck—to operate at high speed with capacity loads, and give low-cost service over a long period of years. The power plant is a sturdy four-cylinder engine, with the necessary margin of power to overcome difficult hauling conditions. The internal gear final drive and all other units measure up to the standard of quality set by International engineers. The Model S is equipped regularly with heavy pneumatic cord *truck* tires, power tire pump, and electric lighting and starting system.

The INTERNATIONAL SPEED TRUCK and the entire International line of trucks stand on a foundation of more than ninety years of successful manufacturing experience. Their daily performance is backed by the unequaled International after-sale service, with free inspections at regular intervals. There are eleven sizes of INTERNATIONAL MOTOR TRUCKS, from the 1500-pound speed truck to the 10,000-pound truck for heavy-duty service. Bodies can be supplied for every hauling purpose.

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INTERNATIONAL HARVESTER COMPANY
OF AMERICA
(INCORPORATED)
CHICAGO U S A

92 BRANCH HOUSES AND 15,000 DEALERS IN THE UNITED STATES

Rambles of a Horticulturist

(*Continued from page 6*)

picking season this year will extend thirty days against only ten days when no irrigation was practiced. All through the season he has averaged thirty to forty cents a crate more than the non-irrigated berries have brought—and in addition, has greatly increased his yield. Mr. Daley has found that the galvanized iron carrier about the shape of the ordinary wooden carriers is far superior.

Soil Fertility

The soils of Berrien County are largely light in character, containing a great deal of silt and sand. The one element they need more than anything else is nitrogen and organic matter. The Department of Agriculture has been trying numerous experiments with peaches, raspberries, strawberries and other fruits, and almost invariably nitrogen in some form has given results. Nitrate of soda, sulphate of ammonia have been applied generously and always seem to give a response. Occasionally it looks as though phosphoric acid combined with nitrogen, might be of considerable value.

I was especially interested to note one peach orchard which had been badly defoliated by the curl, and where nitrogenous fertilizers had been used the trees recovered rapidly and were making a much more vigorous growth than otherwise. It was very striking to see those patches of black caps, for example, that had received liberal applications of nitrogenous fertilizers or stable manures were much better in vigor and yield than the unfertilized tracts. Not only do these soils need nitrogen and organic matter but they respond to early and thorough tillage. In every case where the growers practiced early and thorough tillage against late and poor tillage, the results were remarkable in favor of the well-tilled plots.

Cold Storage

The growers, by co-operating together this year, have built three cold storage and pre-cooling plants and it proved a wonderful salvation, for during the first day of the strawberry season, 50,000 crates were brought in. The three plants were able to handle 35,000 crates and this saved a glutting of the market.

As Sodus, the fruit growers by getting in and working themselves, were able to build a splendid concrete plant for $17,000.00. This plant is equipped with a ten-ton capacity ice manufacturing machine and is supplemented also by electricity. The building is made of cement blocks 60x90 feet, the storage being 40x40 feet, containing four rooms. There is a fan system which gives a circulation of air. The cold air is forced up through a slatted floor. At Sodus there is a splendid plant which cost some $30,000.00 that can handle ten or twelve cars. It has four rooms of 2½-car capacity and could be used either as cold storage or as pre-cooling. There is sufficient power to be able, later, to cool the basement and make a splendid apple storage room. This plant contains two (2) twenty-ton compressors. It contains two rooms having 12,175 cubic feet and two additional rooms each containing 10,944 cubic feet and is designed to give 5 1-10 cubic feet per crate of storage. On June 5th 10,000 crates were stored in this plant, which allowed 8⅛ cubic feet per crate. There are 120 pipes in each room which give about 3000 feet or 1 foot of pipe for each cubic foot. This plant is designed for four tons for each car of 450 crates.

At Stevensville there is a third plant with a ten-ton compressor. This plant has two rooms containing 4575 cubic feet. These three plants have the latest ideas in ventilation, air circulation and cold storage. They are well built and mean much to the industry of that community, and similar plants would mean a great deal to other fruit growing sections.

Red Cherry Growing

A great many red cherries are produced in Berrien County. The Early Richmond were being harvested at the time of our visit. They are not held in as high esteem as the Montmorency which comes later, because the Richmond is smaller and is not of as high a quality, and is apt to break down rapidly with brown rot. It also tends to ripen unevenly. It does have the advantage, however, of being early and of spreading over the season, which is a convenience in marketing, harvesting and canning. This year the canneries were so eager to obtain these red cherries that very few were sold to the fresh market. At the same time the red cherries were being canned, a large tonnage of Downing and Houghton Gooseberries were being put up, some of the canneries handling five to ten tons a day.

Pear Growing a Success

There is one section of the county which has a fairly heavy clay loam, which seems to be especially well adapted to pear culture. In fact, there are a number of growers there who are making a great success. After the orchards are well established, some of the growers are mulching with hay and straw quite successfully. There seemed to be an intelligent handling of the blight situation and it looks as though pear growing in that section could be made a great success. There is a very fine market for pears of all kinds and more growers should give this industry their attention.

All in all, we were immensely pleased with Berrien County. It is near the best markets in the United States. It has a soil which allows for wide diversity of the crops and we believe that the growers are all of a type that will put into practice the best horticultural management known.

Irrigating Berries

MORE and more growers all over the United States are beginning to find that it pays to irrigate berries—both strawberries and cane fruits. In many sections where irrigation was never practiced before, growers are beginning to irrigate, either by passing water down between the rows in shallow furrows or rills, or else by an overhead system. Irrigation will pay big dividends in the berry patch; it prolongs the season, it increases the yields, it improves the quality and strengthens the vigor of the plants.

Straw Worth Money

IN SOME sections of the United States, straw piles are still burned. This straw is worth much money to the average fruit grower. It is of great value where applied, especially to the heavy clay loams. A thin application of this straw placed on the ground in the fall will generally rot nicely during the winter and it can be plowed in the ground in the spring; it will help the soil to hold moisture; it will put it in a much improved physical condition so that the proper bacterial and chemical changes may take place. Such straw run through a chopping machine is also valuable for mulching purposes for strawberries.

Manufacture of Fruit Products

(Continued from page 4)

The time of adding the sugar is a very important factor in consistency. If a jelly-like consistency is desired, add the sugar earlier than directed. Whether the jam is sloppy or hard and dry is primarily determined by the cooking period. A sloppy jam cooked for a few minutes longer will give one of ideal consistency, while if the dry cheese-like jam had been removed from the fire a few minutes earlier it, too, would have been just right.

The manufacturer of fruit and vegetable products will find that he must approach his job with an open unprejudiced mind, willing to profit by his failures, and always finding out why he fails, in order that he may avoid that mistake a second time. He must close his eyes and ears to all who preach the doctrine that there is only one way to make a given product. There is no doubt a best way to do everything, but where is the man or woman of experience who is ready to lay down any such inflexible rules when dealing with such uncertain quantities as fruits—uncertain in the sense that they vary in their component parts.

The above suggestions regarding jellies and jams are given as the result of years of experience. No claim is made that they are the best methods, but they have given a fair degree of satisfaction in our laboratory teaching, and in many farm factories and homes throughout the state.

Apricots and Nectarines

SOME one asks why the apricot and the nectarine are not better known and more often planted.

One reason why the apricot is not more popular in the north is that it blossoms a week or more earlier than the peach and is therefore frequently nipped by late spring frosts. The apricot is smaller than the peach and not quite so attractive to the eye.

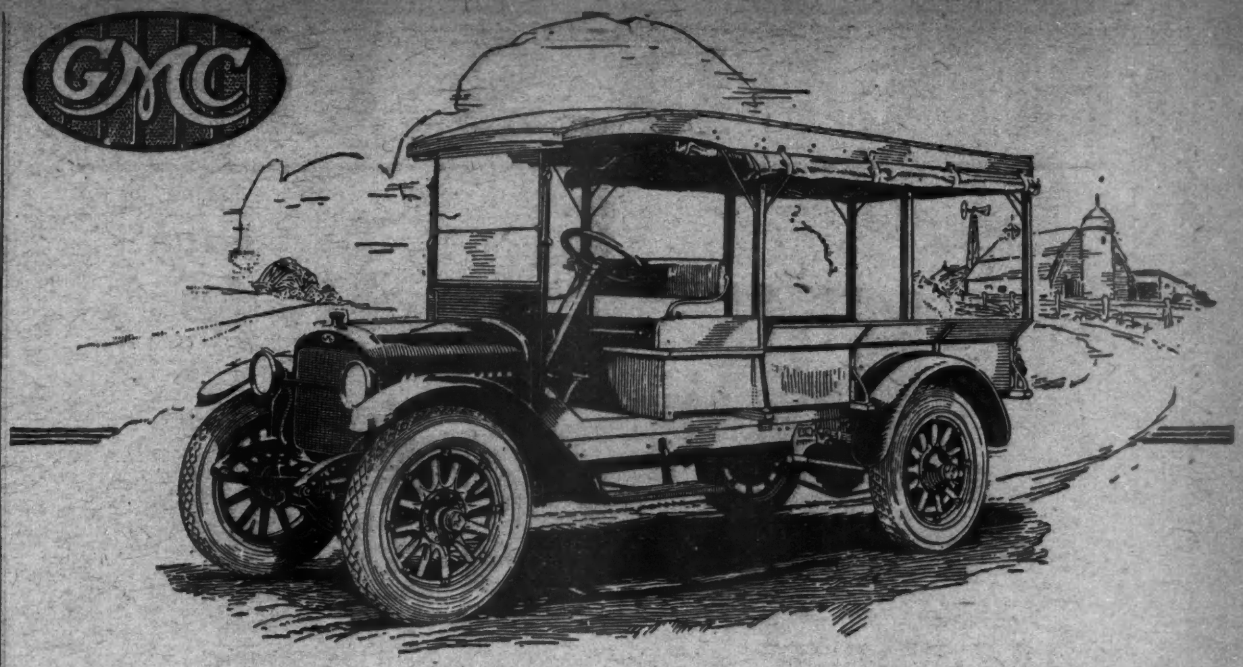
The nectarine is not so good a shipper as the peach. Its superior quality should make it more widely known. It is certainly worth planting in the garden. I do not think anyone would recommend it in this latitude for a commercial fruit. The nectarine differs widely from the apricot and peach. Different varieties have different qualities. I have eaten those that were most delicious, the flesh resembling jelly into which a little granulated sugar had been scattered. The nectarine like the apricot is more difficult to produce than the peach. Both of these fruits are worthy of more attention from gardeners. The nectarine has been grown for commercial purposes in California.

Another fruit but little known is the hardy almond. This tree closely resembles the peach. The nut as it hangs upon the tree reminds you of the peach. The variety of almond growing in my garden was thick shelled and of ordinary flavor. It is mainly of value as a curiosity. It is not generally known that the almond can be grown in western New York.

Pears on Market in July

IN THE Chicago market, during July, the Barry Pears have been shown in many of the grocery stores and fruit stands. These pears are in very good condition and have come through the long storage season in fine shape. It is interesting to see winter pears offered on the market at the same time as the California Loquats and California Cherries from the Newcastle District. The latter were all of a very small variety, however, and largely a novelty.

The Valencia Orange is coming to the front very rapidly as a summer fruit. Ten years ago people did not dream of eating oranges in the summer time. Now, more and more they are coming to know that the orange is a very refreshing fruit during hot weather.



A "Jim-Dandy" Truck

Model K-16 One Ton

It's a Jim-Dandy! That's the universal opinion of the GMC one ton truck.

Fast on the road, powerful in the hard going and economical all the time, this sturdy honest-to-goodness truck is just a "Jim-Dandy" for the farm.

It will haul produce, stock, milk and any other kind of load better and cheaper than a motor truck has ever done before.

For this GMC has improvements which are away in advance of ordinary motor truck construction and which make possible more continuous haulage, lower operating and lower maintenance costs. Such features as Removable Cylinder Walls, Pressure Lubrication, Removable Valve Lifter Assemblies and Instantaneous Governor, are all designed to produce the kind of performance that is vital to the success of a motor truck on the farm.

Model K-16 is a real motor truck, built entirely of truck units—no passenger car parts used.

In addition it is built in the most approved designs of motor truck construction. For instance, this one ton truck has Magneto Ignition, admittedly the most reliable type.

The Ignition is simple, just four wires leading from the Magneto to the spark plugs and all in the open where it can be readily inspected.

The Model K-16 also has Electric Lights, Starter and Generator with a Storage Battery built especially for motor truck use and of extra capacity. The wiring is all carried in metal conduits and is entirely separate from the Ignition System.

Demountable Rims, Cord Tires, Pressure Gun lubrication of the chassis. Extra Switch for spot light and Interchangeable Brake Rods are other GMC refinements.

No truck of like quality has ever been offered at as low a price as this chassis—$1295 at the factory.

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GENERAL MOTORS TRUCK COMPANY—*Pontiac, Michigan*
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You can average higher prices for your fruits by selling them at public sale than in any other way. And the selling cost will be lower. In addition, you get your money within twenty-four hours after sale. Write for free copy of booklet entitled "More Dollars for Fruit Growers."

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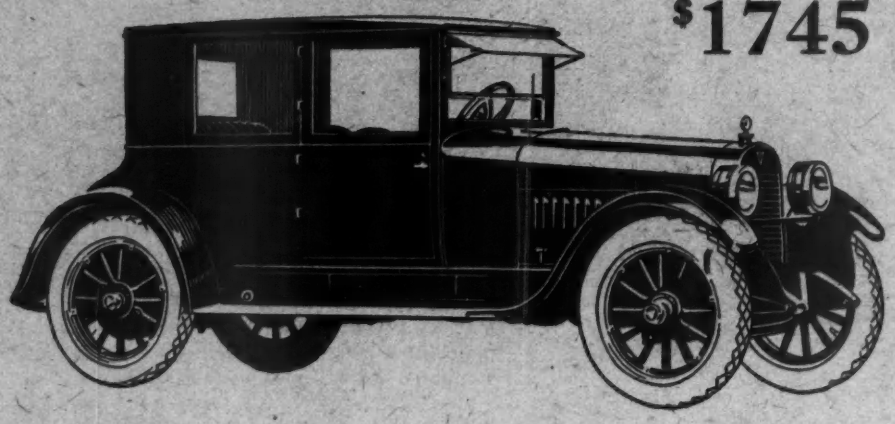

The Coach
$1745

Has the Wonderful New Hudson Motor

This beautiful closed car is the most attractive value ever offered by Hudson.

See how fully it meets your closed car requirements at a saving of perhaps $800 to $1500. Think of a closed car on the famous Super-Six chassis, for $1745.

Hudson's Greatest Value

It is only 6 per cent above the cost of the Hudson open models. It is the lowest differential between open and closed cars ever attained. It is a sensational achievement in car manufacture.

And now it adds a new and greater motor. Even Hudson owners marvel at the change. Performance is wholly altered—smoother, quieter, more reliable.

Order Now to Insure Prompt Delivery

The Coach is certain to be the most popular type Hudson ever built. Be sure to see it and take a ride. It is just out. Early deliveries will be possible only for those who place their orders at once.

Speedster $1645 7-Pass. Phaeton $1695 Coach $1745 Cabriolet $2295 Coupe $2570
Sedan $2650 *Freight and Tax Extra*

(5120)

HUDSON MOTOR CAR COMPANY, DETROIT

New Cherry Sorting Machine

MR. THOMPSON, Manager of the Oregon Growers Cooperative Association's plant at The Dalles, this year rigged up a very unique cherry sorting machine. He used a long, broad canvas belt which moves slowly over a table, carrying the cherries past a line of women who pick out the defective fruit. The good stock empties over the end of the table into paper lined boxes. They are then weighed, stamped, lidded and run into iced express cars without any delay.

By the means of this sorting belt, a great deal of useless and careless handling is eliminated, less bruising is done and more speed is obtained. Fifteen sorters, with the use of one of these belts, get out two carloads a day. It is essential in handling cherries that they be handled as little as possible and that the fruit be moved quickly, and that great care be used that it is not bruised or damaged in any way.

Big Cherry Experiment

The most extensive cherry pollination experiments attempted in the west are now in progress at The Dalles, Oregon. At the request of the growers, the department of horticulture at the Oregon Agricultural college is cooperating with the local county agent in an endeavor to solve the pollination problem, admitted to be the most important one confronting the cherry growers.

Because the three leading commercial varieties of sweet cherries, Bing, Lambert, and Royal Ann are not only self sterile but intersterile, many of the orchards in that district planted to these varieties exclusively have been relatively unproductive and unprofitable. The present investigations are a continuation of the work done some years ago by Prof. V. R. Gardner, which resulted in the introduction of Waterhouse, Black Republican, and other varieties as pollinizers.

More than 35,000 blossoms have been emasculated and bagged under the direction of Prof. C. E. Schuster, assisted by students.

Pollen from 20 different parents was used in making the crosses. The large number of blossoms treated affords an adequate basis, it is said, for judging the comparative value of the different varieties as pollinizers. If, as is anticipated, some of these crosses are found highly desirable it will mean a saving of thousands of dollars every year, not only in The Dalles, but to other sections as well.

Turkeys Save Trees

By Robert E. Jones, California

BY CARRYING a flock of turkeys in conjunction with his orchard James Mills of Hamilton City, California, head of the James Mills Orchards Corporation, this season saved his trees from possible defoliation when the grasshopper pest arrived.

Mills is developing one of the largest citrus and deciduous orchard projects in California. He has more than 2000 acres planted. The district about his fruit plantaton is somewhat undeveloped, since he went into a country that formerly was used largely for grain farming and pasturing. Naturally, there is a large area suited to the breeding of grasshoppers about his farm.

In all of his work Mills has schemed to turn loss into profit. This has been true generally, for he has raised large numbers of hogs, sheep and cows on catch-crops from his orchard lands and upon feed raised on land not yet ready for planting to trees.

But in case of the grasshopper-turkey combination a very definite menace was turned into a decided profit. The hoppers came in increasing numbers this season and Mills had his turkey flock, raised in anticipaton of just such a visitation, ready for them. When the hoppers reached the hopping stage, the turkeys did sentry duty in the dry grass fields adjacent to the orchards. As the big insects jumped toward the green trees before them they were intercepted and gobbled down by the birds. The result was that none of the trees were damaged. The birds themselves thrived on the hopper diet.

Of course, there are other methods of guarding trees and vines from grasshoppers. The approved plan is to spread a poison bran mash on the ground. Hoppers are very fond of bran and the poison will kill them by the hundreds of thousands. Some orchardists who were forced to take emergency measures because hoppers were already in their trees, sprayed with a lead arsenate solution. It is very important to make the solution sufficiently weak to avoid burning the leaves. Two pounds of lead arsenate to fifty gallons of water is recommended.

A Pin Money Point

By J. L. Sherard

FORTUNATE is the woman on the farm who can devise ways and means to turn an extra penny so as to have a little money on the side coming in all through the year. For reasons that may render him for the time helpless, hubby may not be able to thrust his hand into his pocket at any old time and start the merry music that comes from the jingle of ready cash. Besides, the wife likes to be independent and to have pin money to buy a lot of little things which her heart desires and which the husband may not think so necessary.

Raising poultry, selling eggs, carrying to market the surplus stock of vegetables, and all that, are the standbys of most women.

A Profitable Idea

But one woman hit upon a plan which was as simple as it was novel. Living in a hill country, she asked and freely obtained from her husband the use of the terraces on the farm. A terrace, where it has been thrown up for some time, is always rich in vegetable mold and has an abundant supply of nitrogenous matter and humus to feed most any kind of crop.

Without in any way interfering with the cultivation of the regular field crops, this thrifty woman raised berries and vegetables enough in one year to bring in a net return of more than sixty dollars from the terraces in one field. Strawberries were the principal source of profit, and these were followed by tomatoes and a late crop of potatoes. The loose, humus-laden soil produced particularly fine spuds for which a fancy price was obtained.

Pear Blight Control is Feasible

(Continued from page 8)

county fruit inspection is in operation and control of blight is made compulsory, or infected trees are required to be destroyed.

Is Control Profitable?

The question is often asked, can blight control be conducted profitably? Every Bartlett pear orchard in blight infested regions of California and southern Oregon, is a living answer to this question. If the blight had not been controlled the orchards would not be in existence today and if control measures could not have been applied profitably, these growers would long since have grubbed out their trees. One does not need to go to the far West for the answer to this question. There are orchards of Bartlett and other susceptible varieties in New York State, Michigan, Ohio and elsewhere, where blight is under control. If it were not found profitable the control would not be made, and such orchards would soon be eliminated.

Other questions naturally follow. Is there no other remedy than the cutting out method? Is there no prospect of the development of better methods of control? Fortunately these questions can be answered reservedly in the affirmative. There are few, if any, high grade varieties of pears which are not more or less susceptible to the blight. In the West the Bosc and Howell are considered the most susceptible, with Bartlett, Comice and Winter Nelis slightly less so, and Anjou, the most resistant. Among the varieties grown in the East and Middle West, the Clapps Favorite is recognized as about the most susceptible with Bartlett and Flemish Beauty also quite seriously infected, while Kieffer and Seckel are considered quite resistant. The Keiffer, however, is well known to blight seriously under certain conditions, but will stand a great deal of punishment from the blight and on this account is perhaps the most widely grown variety in sections of the East and West. It is gradually being appreciated, however, that under conditions in the southern states there are other varieties more resistant than the Keiffer, for example the Garber, Tyson, Seckel, and Konnce. In general, most of our highest grade pears are quite susceptible.

New Varieties Needed

The final and logical solution of the pear blight problem would be the development by hybridization, of high grade varieties which are essentially totally resistant to this disease, which could be used to replace those now in existence. This would be theoretically possible of accomplishment if resistant species could be found which could be used to hybridize with existing desirable varieties. Fortunately this subject is being thoroughly investigated at the present time. Perhaps the most extensive work is being conducted by Mr. F. C. Reimer at the southern Oregon Experimental Station at Talent, in the heart of the Rogue River Valley, Oregon's most famous pear growing section. Investigations are also being conducted by the Bureau of Plant Industry of the U. S. Department of Agriculture, and by some of the State Experiment Stations.

Prof. Reimer has accumulated what is probably the largest collection of pear varieties and species in any one place, having made two expeditions to China and Japan to collect material. These are being studied from all points of view, but especially with reference to their susceptibility to blight. He has found that there are several species of oriental pears which are very resistant and at least one which is apparently totally immune. This and other countries have also been combed for resistant varieties of pears and some have been found which are very promising. It is not unreasonable to expect that ultimately it will be possible to combine the resistance of some of these species of varieties with the desirable qualities of our finest varieties and possibly even to improve upon them. The solution of the problem in this way, however, is a labor of years and succeeding generations are likely to be the ones to profit by such work.

Trunk Blight

There is a much more immediately pressing problem which needs solution. One of the most serious aspects of the pear blight is the "body blight" or "trunk blight," in other words, the blight cankers which occur on the trunk or larger branches of the tree and in the crotches of the framework. Here the disease does its most fatal work. This form of blight is often difficult to detect until it is well advanced and much damage has been done. Old tree trunks are often more or less irregular, containing deep crevices in which the disease becomes established and from which it is difficult to remove all of the diseased tissue. In some sections also root blight is a very serious problem. Trees often become blighted in the roots, a condition very difficult to detect, and one which often results in the loss of the tree.

It is obvious, however, that if a tree could be grown which had blight resistant roots, trunks and crotches, much of the most serious phase of blight control would be eliminated. Any desired variety then could be top-worked on these stocks and while susceptible varieties would be as subject to blight as under present conditions, the danger of loss of trees and the cost of controlling the blight would be greatly reduced.

Resistant Stocks

Fortunately much progress has been made by Prof. Reimer and others, in the development of our knowledge of resistant stocks. It is well known that the so-called French stock is very susceptible and recently the so-called Japanese seedling, *Pyrus serotina*, have come into quite general use, as a root stock. The Kieffer has been used to some extent as a stock for the trunks and framework, as has also a variety originated in Iowa, known as "Surprise." The Kieffer, however, is only relatively resistant and both the stocks mentioned under Oregon conditions have been somewhat disappointing in their ability to withstand severe winter conditions.

One of the most promising stocks which has been studied is the Chinese pear, *Pyrus ussuriensis*. Varieties of this species have long been cultivated by the Chinese and seedlings of some of these varieties give great promise as stocks for grafting, on which to top-work the more susceptible varieties. A word of caution is desirable, however, since the wild *Pyrus ussuriensis* is being exploited to some extent as desirable stock, but it is a slow grower and does not make a good union and is often difficult to bud. It should be thoroughly understood that

(Continued on page 29)

An easily learned method of proper parking in a limited space is to stop parallel to the curb alongside of the car behind which you are going to park about one foot outside of it; turn the front wheels sharply to the curb and back slowly until you can see that by swinging the front wheels hard over to the left, your right front fender will just clear the left rear fender of car ahead; turn wheels fully to the left and back to proper position at curb. This method, once you know positions at which extreme turns are to be made, will park you at the proper distance from curb and cars in one backward movement. It is plain that to execute these extreme turns in a minimum of space and time your steering apparatus must be in good working order. Ease of steering is made certain by the installation in the steering pivots of Timken Tapered Roller Bearings.

"Ask him to explain it"

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The Son of Wallingford

By GEORGE RANDOLPH CHESTER and LILLIAN E. CHESTER

Young Jimmy Wallingford with "Toad" Jessup narrowly escapes running over a flock of geese. Pretty Mary Curtis laughs at them, and from that moment Fawnlake City becomes to Jimmy the most desirable place in the world to locate. Dusk finds them still talking to Tal Curtis, Mary's hospitable father; but in leave-taking, as he is about to give his name, Jimmy poignantly recalls the scene in the Wallingford library that is the cause of his leaving home. J. Rufus had angrily exploded: "I am not satisfied with you, Jimmy." When he leaves home, Jimmy drops all but the first syllable of the family name. He with Toad Jessup goes to Fawnlake City, to be near Mary Curtis. Toad finds oil bearing rock on the Curtis farm. They start drilling for oil. At a thousand feet they sell their racing car to get money to continue drilling. At Fawnlake City, Jimmy and Toad find J. Rufus Wallingford, Blackie Daw, enjoying a Persian Carnival. Mrs. Wallingford and Violet Bonnie Daw have come back with the boys. Blackie Daw discovers Jimmy and Toad are the "Wall" brothers, so Wallingford refuses to go on with his fake land scheme. Jimmy gets jealous when he sees a stranger talking intimately with his Mary. Jimmy recognizes the stranger as "Doc" Blinkers, a medical student. J. Rufus Wallingford pays the Beegoodes $10,000 for the land he was to boom. The Beegoodes are disturbed by Wallingford's apparent satisfaction with the deal. Lottie and Dottie McCabe of "On With the Jass Company" call on Bertram Beegoode, M. D., Dottie says she has a sprained ankle. By their professional demands upon his attention, the young women of Wallingford's "On with the Jass" company wreck Dr. Beegoode's village practice and enrage his sister Caroline. Meanwhile, Wallingford, Sr., and his friend, Blackie Daw, refuse information concerning a huge roofless, windowless structure and ten tanks that they construct on the land they bought from Henry Beegoode. Eighteen miles away, across the county line, they have a dozen tank cars of crude oil and a gas engine pump attached to the forgotten natural gas line that once ran into Fawnlake City. With a curious crowd outside their highboard structure, J. Rufus and Blackie await oil. Fawnlake City has an oil craze, as the developments progress. Jimmy has a fight with Dr. Beegoode over Mary. Then Mary tells Jimmy, "Dr. Beegoode is to be my husband." Dr. Bertram Beegoode tries to defraud Get-Rich-Quick Wallingford but the latter has surprising evidence. Wallington pumps oil into old gas pipe line believing it feeds Jim's well. Jimmy in white rage at his father's trickery demands of Fanny, his mother, to know why she let him grow up under his father's influence. "Because I loved you both."

OUT of the dense silence which followed this declaration there came a choking sound. It was from the throat of J. Rufus. Jimmy crossed to his mother and, kneeling beside her, put his arm around her, but as she leaned her head on his shoulder and sobbed, she held out her hand to Jim—and he was there to take it, and presently with his free hand he reached out for Jimmy's, and that hand, too, was gripped tightly, whereupon Violet Bonnie frankly blubbered and threw her arms around the whole Wallingford family.

"By the way, father," asked Jimmy, when some degree of normality had been restored, "what did you intend to do when you were holding back the truth?"

"Well, to make a clean breast of it, son, your mother already had me licked before you got here, but when you told me the facts of the situation I couldn't stick. It was too good to be true that you could sell our few gallons of leakage to Henry Beegoode for a quarter of a million!"

"You see, you're not selling a bogus oil well or anything like that, just the stock of a company which owns land, and you'd be legally safe, so Blackie and I planned to let you go ahead, make your sale and collect your quarter of a million in cash, then we'd start the pump and keep your well gushing till you kids could make a get-away. Tit-for-tat stuff, you know. Your mother couldn't see it my way, Jimmy, but to me it was peaches and cream to sting Henry Beegoode, who is trying to sting us, and whom we are going to prove tomorrow to be a crook. You see if there were any crooks in the deal it wasn't to be you kids it was to be Blackie and me. But, of course, since you know it that gaudy little futurist splash is off; it's cold, it's plain drab."

Suddenly Wallingford stopped talking, struck into silence by the peculiar expression on his son's face. The rich pink color was again in Jimmy's oval cheeks and his quiet, quizzical smile was on his lips and his eyes were narrowed with a shrewdness which was appalling in one so young and they sparkled with musing enjoyment.

"You're a better man than I am, Gunga Din," commented the son of Get-Rich-Quick Wallingford, and rising with a leisurely movement so well remembered Jimmy reached for his hat and went out of the door, followed by Toad.

J. Rufus and Fannie looked at each other with a new fear in their eyes, then Fannie in a panic started to follow her son, but J. Rufus touched her arm and held her.

"It's up to Jimmy now," he said.

There was a strange exultation in Jimmy as he paused on the threshold of Henry Beegoode's office, beholding there a full meeting of the stockholders of the Big Hope Oil Company, besides Henry and Bertram Beegoode and Ebenezer Terwixter.

The Big Hope well which Henry would buy for a quarter of a million dollars was worthless! The Curtis farm was worthless! The Beegoode claim on New Bagdad was worthless and Henry Beegoode would have to pay back out of his own funds the money he had taken on those lots! Jimmy would just about break Henry Beegoode; break the whole Beegoode family! He! He could break them! They were crooks! Doc Beegoode there, leaning over the back of Mary's chair and smirking down at her!

It would be fine to break him and to expose him as a crook, and then to finish the job there was something coming off tonight which would put Doc out of the running for good with Mary! Jimmy scarcely looked at Mary Curtis. There was no space in him for any gentle emotion. It was a conqueror, and a ruthless one, who strode into that room, master of the fortunes of them all, knowing what he knew!

There was a seat between grandma and Tal at the end of the long table, facing Henry Beegoode at the other end, and this seat had been tacitly reserved for Jimmy; as tacitly he took it, still with that quizzical smile on his lips, that sparkle in his quiet eyes.

"Well, Mr. Beegoode, we might as well establish our figure and be through with the business. Our price is a quarter of a million dollars."

You could feel the thrill of that sum all around the table.

"That sum was never mentioned!" Henry shrilled, and every wrinkle in his vulturelike face was a wrinkle of pain.

"If you please, Mr. Beegoode," returned Jimmy calmly, "let us not haggle. Take all the time you want to make up your mind whether to pay that sum or not, but that is our price."

"Take it or leave it, Henry, take it or leave it!" added Tal Curtis cheerfully. "You'll find us all of one mind with our friend Jimmy."

Henry Beegoode looked around at the stockholders, and he was a man who recognized an ultimatum when he saw one.

He dug Ebenezer Terwixter viciously in the ribs with his sharp elbow. "Fill in their amount!" he ordered. "And we'll raise our prices on the allotments out there to cover it."

Jimmy's smile did not change.

"We shall require six certified checks in payment," he stated: 25 per cent each to Mr. Jessup and myself, 24 per cent to Talbot Curtis, 24 per cent to Emily Curtis, 1 per cent to Mary Curtis, 1 per cent to Lucy Curtis," and grandma laughed softly as he named her name.

"Assign your stock certificates," snapped Henry, pen in hand, and he made no move to sign checks until he saw certificates for transfer.

Young Wallingford took his fountain pen from his pocket to affix his signature to the transfer space on the uppermost certificate and it was his own, as it happened, the stock of the natural leader and commander of his company, and he drew his breath in deeply.

He smiled as he removed the cap of his fountain pen to the other end. After all, he'd have to give credit for most of his victory to his highly astute father, of whom he was not an unworthy follower, and suddenly he paused.

Through the veins of Jimmy Wallingford there coursed a certain amount of blood, and through his brain a certain amount of thought, and through his heart a certain amount of impulse, all of which were shrewd, tricky, dishonest; and through veins and mind and heart there was a certain other percentage which came from a source which was all honest, all pure, all clean; and as a crystal dropped into murky water clears it from the top downward, so, just as quietly and just as magically, that which was clear and pure and clean in Jimmy Wallingford rose to the surface and settled the sediment down, far down. The blur which had seemed to come on the paper before him, a misty blur, cleared, and out of it a countenance formed, a countenance serene, smiling tenderly with moist eyes—Jimmy's mother! The blur on the paper? It was in his own eyes. He blinked it away as he laid down his pen, aware that they were all looking at him, wondering why he hesitated.

"I have decided not to accept the proposition," he said quietly. He was relinquishing his revenge; but out of the blank silence which followed there came a harsh voice, a strongly harsh voice.

"Why not?" It was Ma Curtis, and she was intensely in earnest.

"I cannot explain, Mrs. Curtis," returned Jimmy, gathering his strength for the contest which was clearly in the determined eye of Mary's mother.

"Then, if you have no reasonable explanation I must insist that we accept Mr. Beegoode's offer."

"Well, well, Emily. Let's wait a little and consider it," suggested Talbot, panic-stricken at the thought of unpleasantness.

"No, Tal." She was not unkind to him, even though she was full of bitterness. "This is my chance, and I'm going to have it. All my life I've skimped and scraped to keep up a genteel appearance on nothing. I don't mean to be hard, but I am hard. I want this money! I don't want to take any more chances, and I want the money in my own name, all of it. To yours and mine both!"

Jimmy saw very clearly now that what is right is right because it is right, and that the way of righteousness is often a thankless way; but while Jimmy was reaching this conclusion, Henry Beegoode suddenly reached forward, all beak and talons.

"Tell you what I'll do. I'll buy the Curtis stock! It's 50 per cent. of the total company, and the hundred and twenty-five thousand dollars is ready."

There was some good blood Jimmy had from his father, some good wit from his brain, some good pluck from his heart, and all these qualities had another good quality from his father, they worked instantaneously! Turning, he found the bright eyes of Grandma Curtis fixed on him in wonder and in faith; and in that instant he knew what to do. He made an imperceptible sign to grandma, and she understood as if it were youth speaking to youth, so when he rose abruptly and walked to the door, grandma was after him and with him—then they were outside the door, and it was locked, and somebody was pounding on the door from the other side.

"What is it, Jimmy?" asked Grandma all aquiver with excitement.

He took both her hands in his and looked down into her bright old eyes.

"Grandma, can you keep a secret? Suppose I was to tell you that there is no more oil in that well?"

"Oh, you don't say!" and her face fell. "Isn't there, Jimmy?"

"Not another drop. So the question is just this. Knowing that the thing is a cheat, and dishonest, would you want to sell your stock—to any one?"

"No, no! Oh, my, no!"

"I can't tell you how sorry I am

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and now there was sadness in the gaze he bent down at grandma.

"Oh, tut-tut, don't worry," she returned brightly. "We've always lived, and we always will. And I'm so happy about you, Jimmy, that I don't mind about anything else. They've been saying that you weren't honest, but they'd better not say it to me any more!" She reached up with her two old hands and clasped him by the head, and drew him down and kissed him tremulously with a kiss that was as soft as rose petals in the warm sun. "Now let me in, Jimmy. Quick. I'll keep your secret, never fear. But I want to settle this."

The door was pulled violently open as Jimmy unlocked it, and Talbot and Ma Curtis, Doc Beegoode and Henry and Ebenezer Terwixter were there, demanding the meaning of all this; but out of the melee came a voice quavering but clear:

"I'm voting my stock with Jimmy!"

It was the mistress of the situation who had spoken.

"Well, you see how it is, Mr. Beegoode," said ma. "The rest of us will sell you our stock."

"Forty-nine per cent!" shouted Henry Beegoode. "Not by a dog-gone sight! With 51 per cent in the control of this smart young swindler?"

"That's enough of that!" blurted Toad, rising in his chair and shaking a warning finger at Henry Beegoode. A hand was on Toad's shoulder instantly; Doc Beegoode. Almost as instantly a hand was on Doc Beegoode's shoulder. It was Jimmy Wallingford's hand and Jimmy mashed Doc back against the wall with a thud. The presence of three ladies put restraint on his action. All he did was to shove his face in front of Doc's, and let Doc quail at the passionate rage which blazed in his eyes; then he turned on his heel and walked out, followed by the stolid Toad.

(To be continued).

No Waste

THE thoroughness with which the apple is now worked over and utilized by some manufacturers makes it comparable with the packing-house pig that leaves only a futile squeal. The apple is not transformed into such a variety of products as the pig, but all are useful, and when the last of the series has been made hardly a smell is left.

In many of the apple-using factories the apples are first pressed to produce cider, which may be sold as such or may be manufactured into vinegar. After thorough pressing the pomace is treated with hot water to remove the pectin, which, after purification, is sold in either liquid or solid form to manufacturers of jellies and similar products and to housewives. The much-wasted and squeezed residue is dried, ground, and sold as cattle feed. —U. S. Department of Agriculture.

Pear Blight Control Feasible

(*Continued from page 27*)

it is certain varieties selected by the Chinese from the wild type, which have proven the most desirable for such stocks. Another species which is very promising is *Pyrus calleryana*. Unfortunately the sources of supply of the most of these desirable Chinese stocks are very limited, and they will probably have to be grown in this country before they are available in any large quantity.

It is not possible at this time to review in any detail the present information which has been accumulated by Prof. Reimer and others who are working on this problem, nor is it desirable to make any very specific recommendations until further work has been done and these stocks have been more widely tested, or at least until the results of the work so far done have been made fully available to the public. It should be recognized that it takes time to adapt any stock to wide ranges of soil and climatic conditions and also to determine which stocks are the most congenial for different varieties

Sufficient has been written, however, to indicate that very material progress is being made to justify, I think, an optimistic attitude toward the future progress of the pear industry.

Any one who contemplates planting pears in the near future should by all means investigate at first hand this question of resistant stocks, but to make sure before purchasing that he is getting the best that is available.

Poison Ivy

By R. L. ANDRAE, M. D.

IN IVY poisoning the skin is irritated by an oil from the plant. It does not spread unless area originally covered is extended by scratching, by rubbing of the clothing or by other mechanical contact, but because of the tenacious property of its irritation it may be carried from one part or person to another by fingers or clothing, retaining its activity for a long time.

Some skins are more sensitive to this noxious oil than others, some people being able to handle the offending weeds with impunity while others develop a marked reaction at the slightest contact. In response to a question often put to physicians, it might be stated that in view of the above facts, there is no methods of phrophylaxis or prevention for sensitive skins.

The only hope, then, for susceptible persons coming frequently in contact with the weed is protection and early treatment.

Protection.—This is best done by the wearing of gloves when contact with the weed is certain or imminent, care being exercised to abstain from touching the face or other skin parts with the gloves.

Treatment.—This must be based on dissolving the offending oil and removing it. This is done with a mild soap such as castile or Ivory soap, warm water and on the more toughened skin such as the hands, a brush may be used. After a thorough cleansing with the above the parts should be washed with lime water or a 50 per cent solution of alcohol (not wood alcohol but any medicated grain alcohol which is allowed to be sold by the Volstead Act, for external use only).

A still better solvent and remover of the irritating oil is gasoline. Gasoline is more satisfactory because of its being more easily obtained in an emergency. Should one come in contact with ivy in the fields, gasoline can be easily obtained from a nearby tractor, or, if near a road, a passing auto can be hailed and enough "gas" procured to immediately wash the hands or other parts affected, thus protecting one's self from much suffering and sleepless nights at a later time.

The oil is precipitated or rendered inert by a saturated alcoholic solution of Lead Acetate which should be applied after cleansing, if soap and water have been used, to neutralize what oil remains.

Lastly, in cases which have not been treated early enough and swelling, redness and irritation of the skin is present, a soothing alkaline lotion like the following should be applied (a bottle of this should be kept on hand always for such emergencies).

Prescription

Calamine	½ ounce
Zinc Oxide	½ "
Glycerine	2 "
Lime Water up to	8 "

NOTICE.—Shake well and apply, allowing it to dry on skin, or keep moist by cloths soaked in the solution.

Should irritation of the skin be great and infection present, consult a physician.

The Florida Citrus Exchange of Tampa is planning to take up the canning of grape fruit. This fruit has been canned only a very short time but is finding a ready sale and ultimately there will be a big outlet for canned grape fruit.

The Northern Pacific Cooperative Berry Growers Association of Washington has placed an order amounting to $250,000.00 for boxes for this coming year.

E. W. Rust, formerly representative of the Bureau of Pest Control, sailed recently for Australia to study the citrus pests of that country. He will then proceed to Cape Town. He is interested also in looking up parasites which will help citrus growers in this country to control their pests.

4042. The "Latest" Play Suit Fashion.

This garment is made for freedom and comfort at play time. The "toy" pockets will appeal to the young wearer. Gingham with facings of linene, or pongee with chambrey for trimming would be attractive. As here shown figured percale and cambric are combined.

The Pattern is cut in 4 Sizes: 2, 4, 6 and 8 years. A 4 year size requires 3½ yards of 32 inch material. To trim as illustrated requires ⅝ yard of contrasting material 32 inches wide.

Pattern mailed to any address on receipt of 10c in silver or stamps.

4052. A New Version of a Popular Style.

This attractive one piece frock of dotted voile is trimmed with organdy and finished with a "short and long" button hole stitch. Plait sections lend fulness, and simulate length to the lines of this model.

The width at the foot with plaits extended is a little more than two yards.

The pattern is cut in 7 sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38-inch size requires 5 yards of 40-inch material.

Pattern mailed to any address on receipt of 10c in silver or stamps.

4053. A Dainty Summer Frock for Youthful Figures.

The new dimities, and prints are very attractive for a dress of this kind. White dimity with a figure in green and trimming of white organdy and green bias bands is here portrayed. The sleeve puffs may be omitted. The sash may be of organdy or ribbon. Net or point disprit would also be pleasing for this style.

The pattern is cut in 3 sizes: 16, 18 and 20 years. An 18-year size requires 5¾ yards of 32-inch material. If collars and puffs are made of contrasting material ⅞ yard of 40-inch material will be required. The width of the skirt at the foot is 2⅝ yards.

Pattern mailed to any address on receipt of 10c in silver or stamps.

4054. A Pretty House Dress.

Figured percale is here shown, with collar of white linene, which is also used for the string girdle. This style is also good for crepe, for gingham and for the new prints and tissues. The skirt may be finished with straight or shaped hem edge. The width at the foot is 2⅝ yards, with plaits extended.

The pattern is cut in 7 sizes: 36, 38, 40, 42, 44, 46 and 48 inches bust measure. A 38-inch size will require 6¼ yards of 32-inch material. Collar of contrasting material requires ⅛ yard.

Pattern mailed to any address on receipt of 10c in silver or stamps.

4057. A Good School Dress.

Dotted percale and white linene are here combined. This style is nice for all wash fabrics and also for serge, tricotine, homespun, or taffeta. The sleeve may be in wrist or elbow length.

The pattern is cut in 4 sizes: 8, 10, 12 and 14 years. A 10-year size requires 4 yards of 32-inch material. The dress may be finished in coat style as the closing indicates.

Pattern mailed to any address on receipt of 10c in silver or stamps.

4063. A Popular Suit for the Growing Boy.

Here is a design that is easy to develop and which possesses a very practical feature in the form of an underarm gusset that will relieve strain at that part of the blouse.

The pattern is cut in 4 sizes: 4, 6, 8 and 10 years. It will require 3¼ yards of 27-inch material for a 6-year size. If desired the blouse may be made of madras or Indian head, and the trousers of cloth or khaki or other contrasting material as illustrated.

Pattern mailed to any address on receipt of 10c in silver or stamps.

ORDER BLANK FOR PATTERNS—Price 10 cents each

PATTERN DEPT., AMERICAN FRUIT GROWER MAGAZINE,
63 W. Jackson Blvd., Chicago.

Enclosed find.....cents for which send me the following:

Pattern No.....Size..... Pattern No.....Size.....

Name.....Address.....

Postoffice..... State.....

Classified Advertising

SMALL IN SIZE BUT LARGE IN VALUE

You'll find it profitable to read these advertisements every month.

ADVERTISING RATES

FIFTEEN CENTS a word for each insertion. COUNT each initial, abbreviation, number or group of numbers as one word. All advertisements classified at option of publisher. No display type or illustrations permissible.

CASH MUST ACCOMPANY ORDER.

SPECIAL NOTICE—All advertising copy, discontinuance orders or change of copy intended for the Classified Department must reach this office by 20th of the month preceding date of issue.

POSITIONS—HELP AND AGENTS WANTED

BIG EARNINGS AND STEADY REPEAT BUSINESS assured agents selling to women and homes, finest, most complete line toilet preparations and specialties. Sure Success Plan. Get details today. Colonial Chemical Company, 631-B. Penn Avenue, Pittsburgh, Pa.

MAKE $39 TO $50 WEEK REPRESENTING CLOVE Famous Philadelphia Hosiery, direct from mill—for men, women, children. Every pair guaranteed. Prices that win. Free book "How to Start," tells the story. George Clows Company, Desk 11, Philadelphia, Pa.

"$10 A DAY AND MORE." OUR NEW BOOK, shows clearly how you may gain sure success and large profits selling Guaranteed Hosiery and Underwear factory to family. It is Free. Write today. G & D Company, 20-E, Grand Rapids, Mich.

WANTED—ONE OR MORE FIRST-CLASS BOX Packers to pack three to six thousand boxes of apples in an Eastern state. A man experienced with apples and graders preferred. Also want a good box nailer. Address American Fruit Grower Magazine, Box 1, Monadnock Bldg., Chicago.

BIG MONEY AND FAST SALES. EVERY OWNER buys gold initials for his auto. You charge $1.50 make $1.35. Ten orders daily easy. Write for particulars and free samples. American Monogram Co., Dept. 92, East Orange, N. J.

SALES REPRESENTATIVE WANTED EVERY COUNty to give all or spare time. Position worth $1200 to $3000 yearly. No previous experience or capital necessary. Write for full particulars. A. K. Silver-Chamberlin Co., Clayton, N. J.

SIDE LINE SALESMAN WANTED TO SELL COAL to your trade in carload lots. Earn a week's pay in an hour. For particulars write, Washington Coal Co., 3525 So. Racine, Chicago.

WANTED—MEN—WOMEN OVER 17. GET U. S. Government Life Jobs. Commence $95 to $133 month. Quick raise. Steady work. No lay-offs. Paid vacation. Short hours. Common education sufficient. Full unnecessary. List positions free. Write immediately. Franklin Institute, Dept. F-106, Rochester, N. Y.

SALES AGENTS. MEN OR WOMEN. $200 A month. Year round position. No layoffs. Take orders for Jennings New Style Hosiery. Written guartee of satisfaction or new hose free. Write for outfit. Jennings Mfg. Co., Dept. 204, Dayton, Ohio.

NURSERY AGENTS—SCORES OF NURSERY AGENTS are now soliciting subscriptions for the American Fruit Grower Magazine as a side line in connection with the sale of nursery stock, and are finding it an easy matter to add from $10.00 to $15.00 a week to their income in this way. You can do the same. Write for particulars. American Fruit Grower Magazine, 548 Monadnock Building, Chicago.

AGENTS WANTED TO ADVERTISE OUR GOODS and distribute Free Samples to consumer. 90c per hour. Write for full particulars. American Products Co., 8796 American Bldg., Cincinnati, Ohio.

HELP WANTED—FEMALE

WANTED WOMEN. BECOME DRESS DESIGNERS. $35 week. Learn while earning. Sample lesson free. Franklin Institute, Dept. F-550, Rochester, N. Y.

POULTRY AND CHICKS

CHICKS—8C UP. LEADING VARIETIES. POSTpaid. Guaranteed. Illustrated chick guide free. Superior Hatcheries, Windsor, Mo.

90 BREEDS. POULTRY, EGGS, CHICKS, DOGS, Pigeons, Hares, Parrots, Ferrets. List free. Bergey's Poultry Farm, Telford, Pa.

PROPERTY FOR SALE

100 ACRE APPLE ORCHARD, 7000 TREES OF Choice varieties, 3,000 in bearing. Located mile from Dixon, Mo. Price right. T. W. Campbell, Dixon, Mo.

FORDACRES, AN IDEAL RANCH HOME. 80 ACRES best river bottom land, one mile from Eugene, Oregon. 10,000 people. State University. 30 acres apples, pears, cherries, walnuts, 13 years old, fine bearing. 40 corn, oats, potatoes, roots. Beautiful house, modern, large shade trees, smaller house, 3 barns, silo. 6 wells soft water. Good income. $40,000; terms. Could be divided at good profit. Old age compels sale. James W. Ford, Eugene, Oregon.

FOR SALE—RIVERSIDE FRUIT FARM. TEN THOUsand bushels apples on trees; good local market for entire crop; near town of ten thousand; good roads; good improvements; most beautiful farm in Oklahoma. Liberal terms. P. O. Box 302, El Reno, Oklahoma.

A GOOD BUY—WILL SELL FOR CASH OR HALF cash and balance in payments—fine 876-acre orchard in Dixon, Missouri, about 7000 apple trees of the Jonathan, Grimes, and Ingram varieties. Will have about 10 carloads this fall—same to be included in sale of orchard if desired. An opportunity of a lifetime. Write J. D. Anderson, St. Charles, Mo.

FOR SALE: HALF INTEREST IN COMMERCIAL apple orchard of five thousand trees located in southern Ohio. Trees from six to eight years old in good healthy condition. The orchard has been well taken care of. Prefer to have a partner who can take full charge. Splendid opportunity for the right party. Address Jackson Orchard Company, High and Chestnut Sts. Columbus, Ohio.

FINE COMMERCIAL ORCHARD 250 ACRES, 170 acres in bearing mostly, $300 per acre with the crop on the trees. Get busy. Reason for selling because of old age. Any other information write, R. L. Hudson, R.R. No. 7, Olney, Ill.

FARM CATALOGUE POSTPAID. CHAPIN FARM Agency, Boston.

FOR SALE: THIRTY-FIVE OR FORTY ACRES OF best Fruit Land. For information write George Sanford, Anna, Ill.

FOR SALE—MICHIGAN FRUIT AND STOCK FARM. 85 acres apple orchard. Write owner, W. L. Gaines, Urbana, Ill.

$10 TO $50 DOWN! STARTS YOU ON 20, 40 OR 80 acres of good clay loam land near a hustling city in Michigan. Balance to meet your circumstances. Prices now only $15 to $35 per acre. Write for big illustrated booklet giving full information. IT'S FREE. Swigart Land Co., Z-1206 First National Bank Bldg., Chicago.

AUTOMOTIVE

AUTOMOBILE MECHANICS, OWNERS, GARAGEmen, Repairmen, send for free copy America's Popular Motor Magazine. Contains helpful, instructive information on overhauling, ignition wiring, carburetors, batteries, etc. Automobile Digest, 813 Butler Bldg., Cincinnati.

MISCELLANEOUS

NEW RADIO BOOK JUST PUBLISHED. A COMplete guide for those interested in the construction or operation of radio receiving sets. Discusses everything of interest to the beginner. Written so it can be understood. Fully illustrated. 50 cents, postpaid. Hoosier Products Co., Box 761, Evansville, Ind.

RADIOPHONE RECEIVING SETS AND SUPPLIES. Standard makes, Tuska, De Forest, Duck's, Cutting and Washington. Quick delivery. Domestic Radio Company, Livingston, Ill.

RADIO—BEFORE PURCHASING YOUR RADIO Receiving Set write for our Individual Radio Service Plan. All apparatus constructed in our laboratories and guaranteed to give satisfactory result from distant broadcasting stations. Wizard Radio Company, 22 E. Monroe St., Chicago, Ill.

"APPLE PICKER"—THE MASTER FRUIT PICKER. So simple that a child can operate it. No ladder or steps necessary. Price $1.50 postpaid. The Master Company, Des Plaines, Illinois.

STUDY JOURNALISM, ADVERTISEMENT WRITING, Salesmanship, and Photographic Journalism at home. New method. Lowest tuition rates. Expert instructors. Write, mentioning subject in which interested. Walhamore Institute, Lafayette Building, Philadelphia, Pa.

SELL YOUR SNAP SHOTS AT $5.00 EACH. KODAK prints needed by 25,000 publishers. Make vacations pay. We teach you how and where to sell. Write Walhamore Institute, Lafayette Bldg., Philadelphia, Pa.

500 THINGS TO SELL BY MAIL. REMARKABLE new publication. Workable plans and methods. Loose-leaf, cloth binder. Prepaid $1.00. Walhamore Company, Lafayette Bldg., Philadelphia, Pa.

NATURAL LEAF TOBACCO. CHEWING 5 POUNDS $1.75; 10 pounds $3.00. Smoking, 5 pounds $1.25; 10 pounds $2.00. Send no money. Pay when received. Tobacco Growers Union, Paducah, Ky.

TOBACCO DUST $25.00 PER TON, F. O. B. NASHville, in hogsheads. Cumberland Tobacco Works, Nashville, Tenn.

ARTIFICIAL EYES FITTED AT HOME $2. BOOKlet free. Denver Optic, 502 Barclay, Denver, Colo.

PHOTO FINISHING

TRIAL OFFER: 25C FOR DEVELOPING AND 6 Glossy Prints. Best work. Prompt service. Sample print free. Bilger Studio, 53 Main Street, Freeport, Ill.

There's Money in Fruit

By B. Yorkstone Hogg, Florida

THERE'S money in fruit, and plenty of it, for I have tried poultry raising, gardening and general farming and I prefer fruit every time, for fruit is what makes many an Italian and Syrian rich, and if it makes these industrious foreigners rich, why will it not make you and I rich?

My own experience shows me conclusively that fruit is about the best thing that a farmer can have on his place, for I have had all manner of things on my place, and nothing has paid like fruit.

My fruit trees are healthy, and they produce prolific crops under adverse conditions, and when they get firmly established neither drouth, nor wet spells affect them permanently, for I can remedy all these things with fruit trees, but, with a garden, it is goodbye garden, if it gets too wet, or too dry, and even with a windmill pumping water all day long, and me distributing it, it takes valuable time to get that water on the garden, and time is money and don't you forget it.

With fruit trees, after the second year they practically take care of themselves for they grow and push their tap roots deep into mother earth, and this fact makes them immune from drouths for the dryer the season the faster they rush their tap roots down in "terra firma," and as they rush their tap roots down, they automatically get fertilizer, which neither the garden, nor the general farmer can get, for this fertilizer is far below the surface of the earth, and there is no way possible to get it out of the ground, save by planting fruit trees.

Prices To Be High

Fruit trees can also stand cold better than garden and general farming, and if they are the kind that is best adapted for your locality, they will pay fabulous prices inside of a few years, for it takes money to start a fruit grove, and plenty of it and there is a wait, and during this wait there is nothing coming in, unless there is an income from some other source.

This makes it advisable for the young orchardist to plant something between the rows, to keep the wolf from the door during the wait between planting and bearing, and if he is the right kind of a farmer, he will do that, but, many a farmer, who starts in fruit growing does not do that for many reasons, but if he did that his land would be richer and the fruit would grow better.

On my farm, I have other things cultivated between my fruit trees, and although I am not an old farmer in either years or experience, yet, I have the most varieties of fruit trees of any man in my county, and what is more important my fruit is the healthiest and best grown in the county, for I use common sense and plenty of it, and never kill a benefactor of the fruit trees, not if I can help it.

Protects the Birds

Birds are allowed to go hither and yon in my grove, and they are allowed to make their nests where they will, and although I am troubled with neighbors' cats, yet I give them as much protection as I possibly can, and as I am successful in giving them a fair amount of protection, they recompense me in many ways, for the woodpecker, pecks the diseased trees clean, and makes them grow fast, and the other birds do equally useful stunts and soon they mate and have young and the young generation pitch in and help me too.

Many a time I have watched a mocking bird, or a blue jay, or a red bird, picking up an injurious worm, and taking it to their young for their breakfast, and as I watched that interesting sight I thanked the Sovereign Architect of the Universe that I had not killed that bird, and that I had sufficient judgment to see that that bird was really my friend.

Poultry and Fruit

Besides these wild birds I have tame birds, such as chickens, ducks, turkeys and guineas, and they scratch, pick and fertilize my place and today, I have become a successful fruit farmer, whereas if I had relied on sprays and artificial disinfectants I would have been up against it for these things cost a great deal of money, and although they are necessary at certain times, and although even I use them we should all strive to let God's plan go through and not muss up things as we frequently do through lack of experience, or sheer wantonness.

Chickens in fruit trees go hand in hand and there is not an orchard that cannot well afford to support a small flock of chickens, for it is these birds that scratch out the cut worms, and dig around the parts of trees that you are afraid to plow around and for fear of hurting the roots, but Mrs. Henn is not that timid, and when she does plow around she not only benefits the roots, but gets the injurious bug, that is hiding in that very spot and so does two useful stunts in one and the same action.

Besides eggs are going to be very high this winter, and what is better than having a flock of Rhode Island Reds, White Leghorns, Black Minorcas, Plymouth Rocks, or any real breed of chickens, and having the dear old rooster say "Good Morning Master, I'm powerfully glad to see you," as any real rooster says, when he sees his master coming out of the house on a dull frosty morning?

Are Animals Poisoned By Poisonous Sprays?

I HAVE never witnessed or heard of an instance where animals were poisoned by the poisonous sprays thrown upon fruit trees. There would seem to be danger where grass or hay has been eaten by animals in orchards that have been recently sprayed with arsenate of lead or other poisonous sprays. In such a case there must be considerable of the spray material on the hay or grass, but it would be dissipated almost entirely by the first shower. Most spraying is done before the grass, hay or other product is in a condition to gather or hold the spray.

New League of Nations Puzzle

WIN $1,000 CASH

TEDUNI STASET

LAND ENG	PANAJ	EC FRAN
ADA CAN	GIUM LEB	TAILY

Here are 7 nations which helped to organize the League of Nations. The letters in each name are all there but are disarranged. Can you rearrange them so as to spell the 7 nations correctly? See how much you know about International Affairs.

FREE

A Hansel and Gretel Weather Prophet Sent FREE to every Contestant reaching 1485 points. Invented by scientific, forecasts weather 5 to 24 hours. Stands 11-2 inches high, width 6 inches. Hansel and Gretel come out to forecast fair weather; when comes out to forecast rain. Has thermometer.

DOES NOT COST A CENT TO ENTER THIS CONTEST

Can you name seven nations which helped to organize the League of Nations after the world war? The United States was one of course, though not in now. Can you name the other six nations represented in this puzzle? If so, you get 1400 points out of only 1500 points necessary to win $1,000.00 in Cash! And there are 74 more Big Cash Prizes! Surely you can win one.

WEATHER PROPHET FREE

A Hansel and Gretel Weather Prophet sent free to you and every contestant securing 1485 points: Also $50.00 extra as first prize winner if you get your 1485 points in 20 days; 5% extra to other contestants on same offer. This is easy and you can get the Weather Prophet free if you try. The additional 15 points for $1,000.00 and other Big Cash Prizes will be awarded for largest and nearest correct list of words which can be spelled with the 20 letters found in the name of our company, "The Fred Wright Company."

SEND NO MONEY—ANSWER PUZZLE ONLY

You can ask teachers or anyone to help. Or possibly you yourself can rearrange the letters in above puzzle so as to spell the Seven Allied Nations correctly. Try it now. Write them plainly on a sheet of paper, sign your name and address carefully and send to us at once! Correct answer will earn 1400 points will be mailed on receipt of your answer, 85 more points are easily secured by telling five neighbors about our Beautiful Colonial Initial Dinner Sets offered now at a special bargain. It is not necessary to sell any. Just prove by affidavit that you have told five neighbors about this beautiful dinnerware. You need not send us a cent but may win $1,000.00. Remember, you get a Hansel and Gretel Weather Prophet Free for 1485 points, whether you win a cash prize or not. 1500 points wins $1,000.00. Don't miss this. Send answer to League of Nations Puzzle today sure: Can you use $1,000! If so, get busy at once.

THE FRED WRIGHT CO.

Dept. 256 Des Moines, Iowa

RULES OF CONTEST

1. Any person in U. S. or Canada, outside Des Moines and not connected with our company may enter this contest.
2. Contest starts July 1, closes Nov. 15, '21.
3. 1500 points will win $1,000.00, next highest number of points will win second prize, and so on. "(see table)"
4. Each contestant securing 1485 points receives Weather Prophet prize free.
5. 1400 points given for solving League of Nations Puzzle.
6. 85 points given to each contestant joining with affidavits that he has shown our illustrated circular of Colonial Initial Dinner Sets to five neighbors. Or one order for 97 piece set dinnerware at $7.68 is accepted as sufficient proof, or one order for 51 piece Aluminum set at $8.86.
7. 15 points or fractions thereof will be awarded the contestants submitting the 75 largest and nearest correct lists of words spelled with the 20 letters contained in "THE FRED WRIGHT COMPANY"

"Points will be awarded and prizes distributed to 75 highest standing contestants."

Each letter may be used in the same word only as many times as it occurs in "The Fred Wright Company" and no more. Only complete words found in Webster's New International Dictionary will be counted. Abbreviations, compound words, dialect, obsolete, and foreign words can not be counted. Words spelled alike but with different definitions will be counted only as one word. The same word spelled more than one way will be counted only once. The singular and plural of a word cannot both be used. Incorrect words will be counted as errors at the rate of 1-5 of a point for each incorrect word.

8. In case of ties full prizes tied for will be given to each tying contestant.
9. All contestants agree to accept the decision of the judges as final and conclusive. Three judges having no connection with our company award the prizes.
10. Official announcement of prize winners will be published promptly following close of contest, and also mailed to any person sending 2 cent stamp.

THIS IS ALL—GET BUSY AND YOU MAY WIN $1000.00.

COMPLETE LIST OF BIG CASH PRIZES

75 Cash Prizes—Total of $2000.00—To the 75 Persons sending the largest number of points in the League of Nations Puzzle Contest we will pay the following 75 prizes:

First Prize	$1000.00	Seventh Prize	10.00
Second Prize	200.00	Eighth Prize	10.00
Third Prize	100.00	9th to 10th Prize, ea.	10.00
Fourth Prize	75.00	26th to 30th Prize, ea.	10.00
Fifth Prize	50.00	31st to 50th Prize, ea.	10.00
Sixth Prize	25.00	51st to 75th Prize, ea.	10.00

Rogers Silverware FREE

Ask for special offer of Rogers Silverware FREE to all contestants for a little extra work. Not part of contest.

Six Teaspoons
One Gravy Ladle

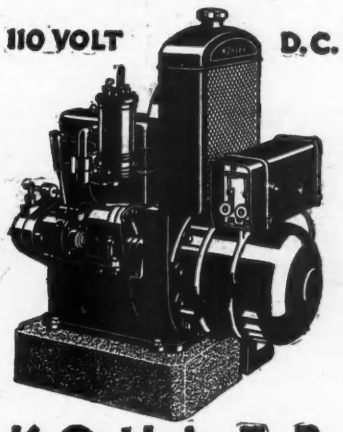
Simple, Reliable, Efficient

—no Storage Batteries

POWER *for* *Washing*

LIGHT *for* *Farm Homes*

110 VOLT D.C.



KOHLER AUTOMATIC

Power & Light

This compact plant combines, exclusively, the following features of simplicity, convenience and economy: (1) no storage batteries, (2) automatic start and stop, (3) automatic governor tapering fuel to current being used, (4) standard 110 volt electricity, (5) 1500 watt capacity.

POWER *for* *Ironing*

LIGHT *for* *Barn Yards*

". . . . . Electricity has played no small part in bringing simplified, modern methods to farm work and farm living during the past few years. Shorter hours—less manual labor—a brighter, more contented, more efficient household . . . More time for everyone—more pleasure in living."

* * *

ONE of the things that users like best about the Kohler Automatic Power and Light Plant is its simplicity.

It has but three major parts.

These are the engine, the generator, the automatic device.

The engine is of the four-cylinder, valve-in-head type—compact, quiet, steady and economical.

The generator is sturdy and reliable —keyed to the engine's crankshaft, it runs silently and true.

The automatic device is simple and sure, and Kohler patented. It starts the engine and the generation of electricity whenever you turn on any light or appliance.

All the electrical current generated by the Kohler Automatic is delivered directly to the point of use, *without storage battery losses.* It gets to its work as illumination or power in its original intensity and vigor.

The current is standard, reliable 110 volt electricity, 1500 watt (two electrical horsepower) capacity, which means that it will carry farther and do more work than current from ordinary electric plants.

If you are thinking of installing a power and light plant, as so many progressive farmers now are, be sure you see the Kohler Automatic.

It gives you electrical service in its most useful, most dependable form.

Its price is no more than you are asked for ordinary plants which lack the Kohler's exclusive features. Plant includes 55-gallon gasoline storage tank. The Kohler Automatic has been approved by the Fire Underwriters' Laboratories. Convenient time payments can be arranged.

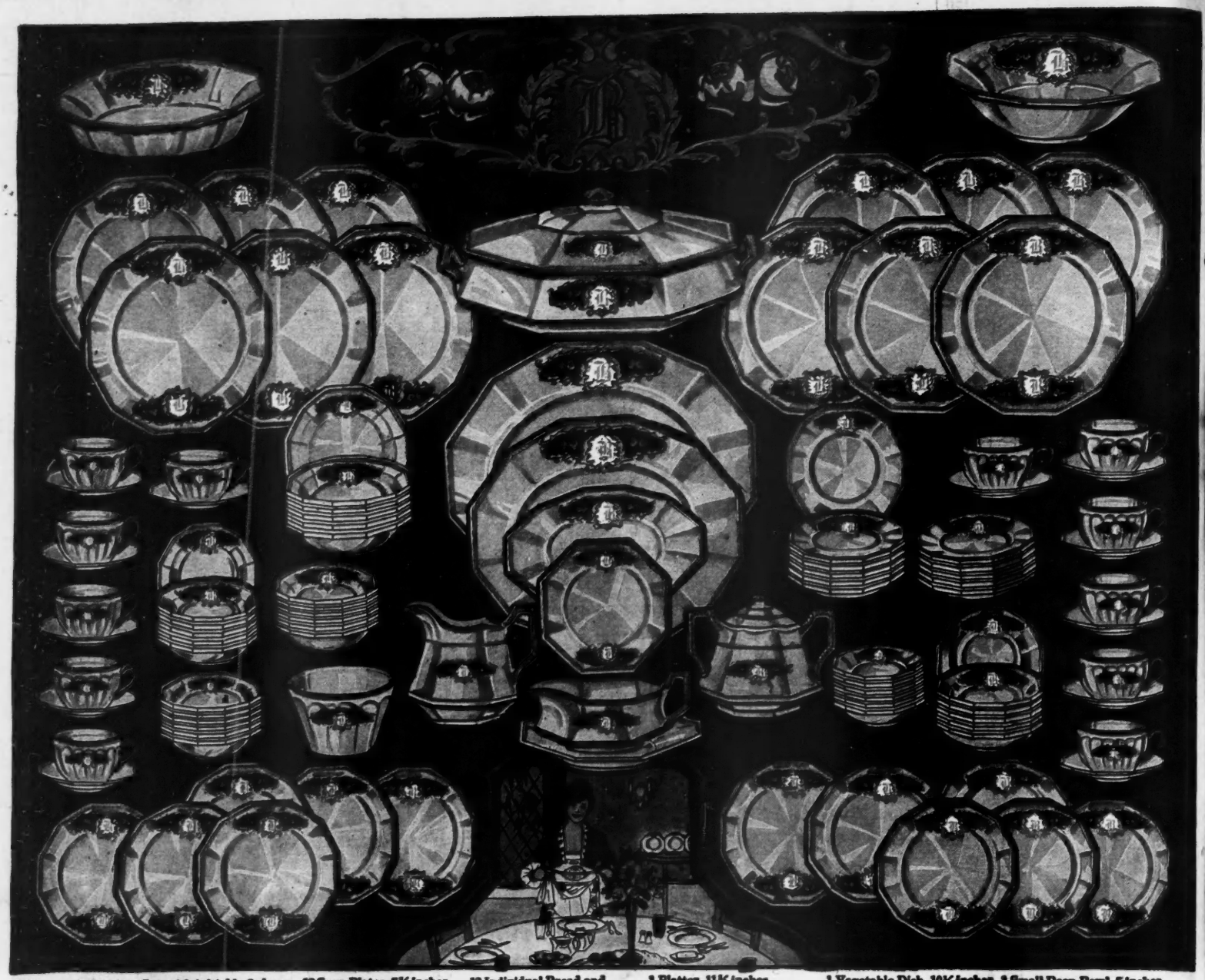
Send for interesting, illustrated booklet and name of nearest Kohler dealer. Dealers, write or wire today

KOHLER OF KOHLER

Kohler Co., *Founded 1873,* Kohler, Wisconsin *Shipping Point,* Sheboygan, Wisconsin

ATLANTA, BOSTON, CHICAGO McCormick Bldg., DETROIT, HOUSTON, INDIANAPOLIS, KANSAS CITY, MINNEAPOLIS, NORFOLK, NEW YORK 20 W. 46th St., OMAHA, PHILADELPHIA, PITTSBURGH, ST. LOUIS, SAN FRANCISCO, SEATTLE, LONDON

MANUFACTURERS OF ENAMELED PLUMBING WARE AND KOHLER AUTOMATIC POWER AND LIGHT 110 VOLT D. C.



This superb 110-piece Set, with initial in 2 places in wreath with 5-color decorations on every piece, and gold covered handles, consists of:
12 Dinner Plates, 9 inches
12 Breakfast Plates, 7 inches
12 Soup Plates, 7¾ inches
12 Cups
12 Saucers
12 Cereal Dishes, 6 inches
12 Individual Bread and Butter Plates, 6¼ inches
12 Fruit Dishes—5¼ inches
1 Platter, 13¼ inches
1 Platter, 11¾ inches
1 Celery Dish, 8¾ inches
1 Sauce Boat Tray, 7¾ inches
1 Butter Plate, 6 inches
1 Vegetable Dish, 10¾ inches with lid (2 pieces)
1 Deep Bowl, 8¾ inches
1 Oval Baker, 9 inches
1 Small Deep Bowl, 5 inches
1 Gravy Boat, 7¼ inches
1 Creamer
1 Sugar Bowl with cover (2 pieces)

$1 Brings this 110-piece Gold Decorated Martha Washington Dinner Set

Hartman wants you to put this superb gold decorated, initialed Dinner Set on your own table on *free trial.* Only by actually seeing this beautiful, famous **Martha Washington pattern** can you realize how wonderful it is. Send only $1 and we ship the full set—110 pieces in all. Use the dishes 30 days. Then if you are not so delighted that you would not part with them, return the set and we will refund your $1 and pay transportation charges both ways. If you keep them, **take nearly a year to pay** on our easy terms. Send the coupon today.

Important!
Hartman guarantees that every piece in this set is absolutely first quality—no seconds. This is a standard or "open" pattern. Replacement pieces may be had of us for 3 years. Each piece wrapped in tissue paper. Excellent packing to prevent breakage. Shipped at once. No delay.

Your Initial in 2 Places on Every Piece
5-Color Floral Decorations and Gold

Wonderful artistic effect is given not only by the new and attractive shape of every dish, but by the rich design surrounding the initial. Your initial with these superb decorations of scrolls, leaves and roses in natural colors, put on by special fired process, appears in two places on every piece. As handsome as the enameling you see on fine jewelry.

All Handles Covered with Gold

Every handle is covered with polished gold such as you see on the most costly imported dishes. The ware itself is beautiful, lustrous, snowy white, and besides the initial, floral decoration and gold covered handles, every piece has two gold border lines as a finishing touch. No other pattern to equal the famous "Martha Washington." A set you will be proud to display before your guests. Elegant, refined, artistic, and yours now at a bargain price. And all the dishes you need—110 of them—yours, first on free trial; then easy payments. Shipped on **30 days' free trial** direct from our Chicago warehouse. Shipping weight about 90 pounds. You must not miss this opportunity Mail coupon today!

Order No. 324DDMA13. Bargain price, $32.85. Pay $1.00 now. Balance $3.00 monthly.

HARTMAN FURNITURE & CARPET CO.
DEPT. 4671 CHICAGO, ILL.

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A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

FREE BARGAIN CATALOG

This great free 368-page catalog gives you the most amazing bargains in furniture, rugs, linoleum, stoves, watches, silverware, dishes, washing machines, sewing machines, aluminum ware, phonographs, gas engines and cream separators, etc.—all on our easy terms—30 days' FREE trial on everything. *Postal or letter brings it Free.* "Let Hartman Feather YOUR Nest."

—— Mail Coupon Now ——

HARTMAN Furniture & Carpet Co.
Dept. 4671 Chicago, Ill.

I enclose $1.00. Send 110-piece Golden Martha Washington Dinner Set No. 324DDMA13. I am to have 30 days' free trial. If not satisfied, will ship it back and you will refund my $1.00 and pay transportation charges both ways. If I keep it, I will pay $3.00 per month until full price, $32.85, is paid. Title remains with you until final payment is made.

Name.....

Street Address.....

R. F. D.....Box No.....

Town.....State.....

State Your Occupation.....Color.....

Give Initial Wanted (Any One Letter).....